SOAP AND CHEMICAL SPECIALTIES

ECEMBER 1958

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Angelique's "Satins" are first pressure packaged toilet soaps

IN THIS ISSUE

Do 1959 auto finishes need waxing? . . . 89
What's new in aerosol formulations . . . 127
C.S.M.A. meeting in New York 85
Where are detergent compositions headed? . . . 49

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OLIN MATHIESON CHEMICAL CORPORATION
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All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax...beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Over-doing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

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The percentage of solid content is not nearly as important as the quality of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Over-waxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

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Volume XXXIV, No. 12—December, 1958

Cover photo: Believed to be first toilet soap dispensed from pressure package are "Black," "Pink" and "White Satin(s)" of Angelique, Wilton Conn. Containers are Crown "Spra-tainers"; valves by Precision; plastic caps by Gilbert Plastics and decoration by Albert Sierad, Inc. Angelique does some of its own filling, and also uses Berkshire Aerosol Products, Bridgeport, Conn.

IN THIS ISSUE

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MEMBER SINCE 1934

41 IN BRIEF AS THE EDITOR SEES IT

45 AS THE READER SEES IT

47 DETERGENTS, CLEANSERS, SOAPS

49 HOUSEHOLD SYNTHETIC DETERGENTS, *by Willis J. Beach*

53 REVIEW OF DETERGENT-GERMICIDE INTERACTIONS, *by Denzel L. Dyer*

56 FDA EXPLAINS DETERGENT STAND

58 NEW FORMAT FOR SOAP INDUSTRY MEETING

59 DETERGENT ADSORPTION ON SOIL & SUBSTRATE (Part II), *by J. C. Harris*

71 CHEMICAL SPECIALTIES

85 CSMA'S 45TH ANNUAL MEETING

89 DO NEW AUTO FINISHES NEED WAXING? *by K. F. Parr and D. E. White*

97 CANADIAN SPECIALTIES MAKERS MEET

105 DISINFECTANT FOR MILITARY USE, *by W. B. Mizuno, M. R. Rogers and I. M. Kaplan*

115 AEROSOLS VS. HOUSE FLIES, *by J. H. Fales and O. F. Bodenstein*

123 ANATOMY OF A SALES CONTEST, *by G. H. Wood*

127 FORMULATION OF AEROSOL PRODUCTS, *by G. L. Armstrong*

145 PACKAGING

153 AEROSOL VALVES, *by Joseph Pizzurro*

159 PACKAGING NOTES

165 NEW PRODUCTS PICTURES

169 NEW TRADE MARKS

174 1958 CSMA AEROSOL PACKAGING CONTEST WINNERS

183 PRESSURE PACKAGING

198 PRODUCTION

201 NEW TOILET SOAP PRESS

203 NEW DETERGENT APPLICATIONS

209 PRODUCTION CLINIC

211 NEW PATENTS

213 BOOK REVIEWS

215 PRODUCTS AND PROCESSES

217 SOAP PLANT OBSERVER

221 NEWS

253 PROFESSIONAL DIRECTORY

255 CLASSIFIED ADVERTISING

259 CONTRACT PACKAGING/PRIVATE LABEL GUIDE

260 MEETINGS CALENDAR

261 ADVERTISERS' INDEX

262 TALE ENDS

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Average available chlorine, %	57.0	59.7	69.9	88.5
Melting point °C	230*	230-250*	225	225-230
pH (saturated solution)	7.3	6.1	2.6	2.9
Solubility (g/100 g. soln.) H_2O at 26.8°C	10.3	24.8	2.57	1.2
Color	White	White	White	White
Physical form	fine powder	fine powder	fine powder	fine powder

*decomposes without melting

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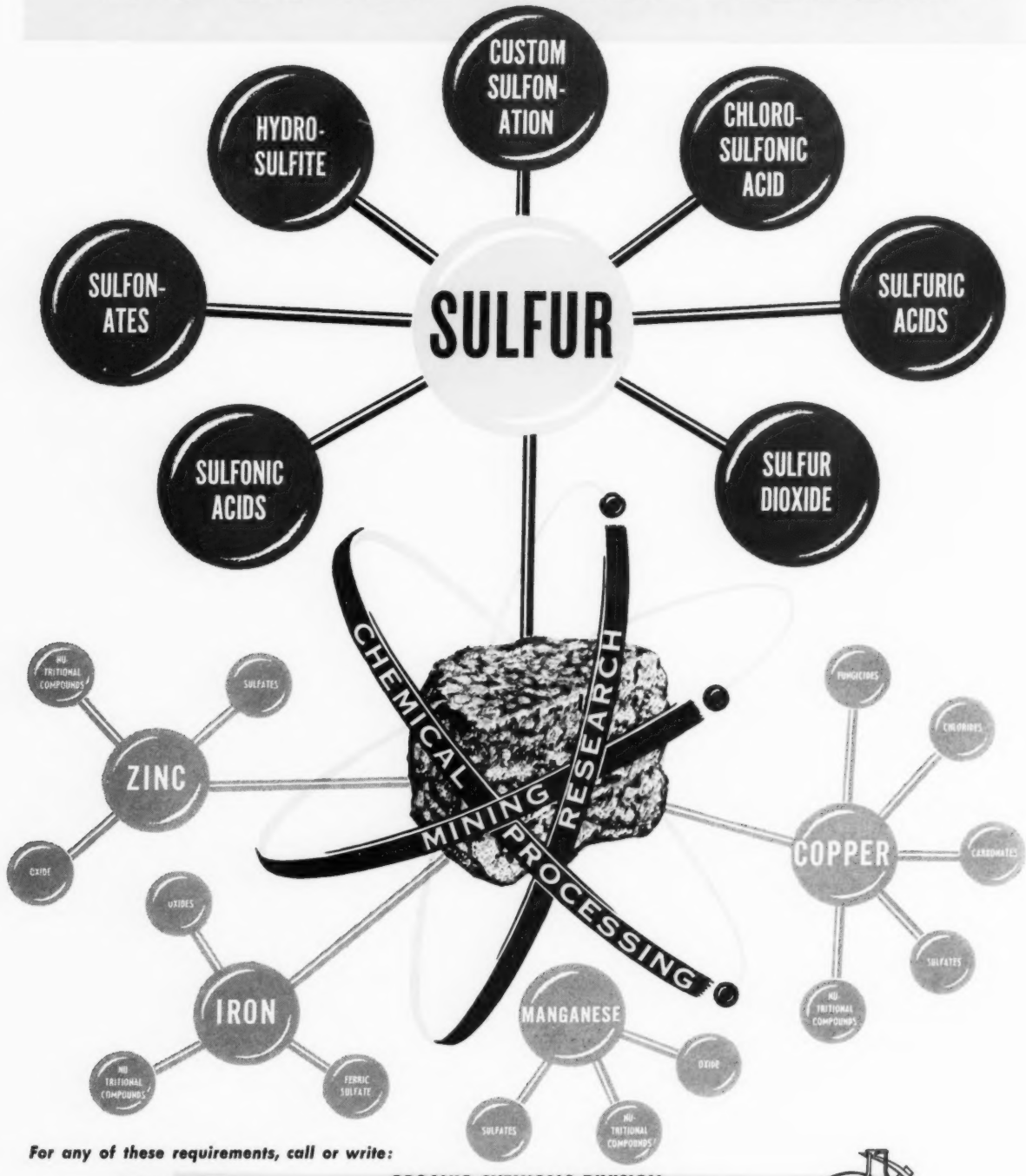

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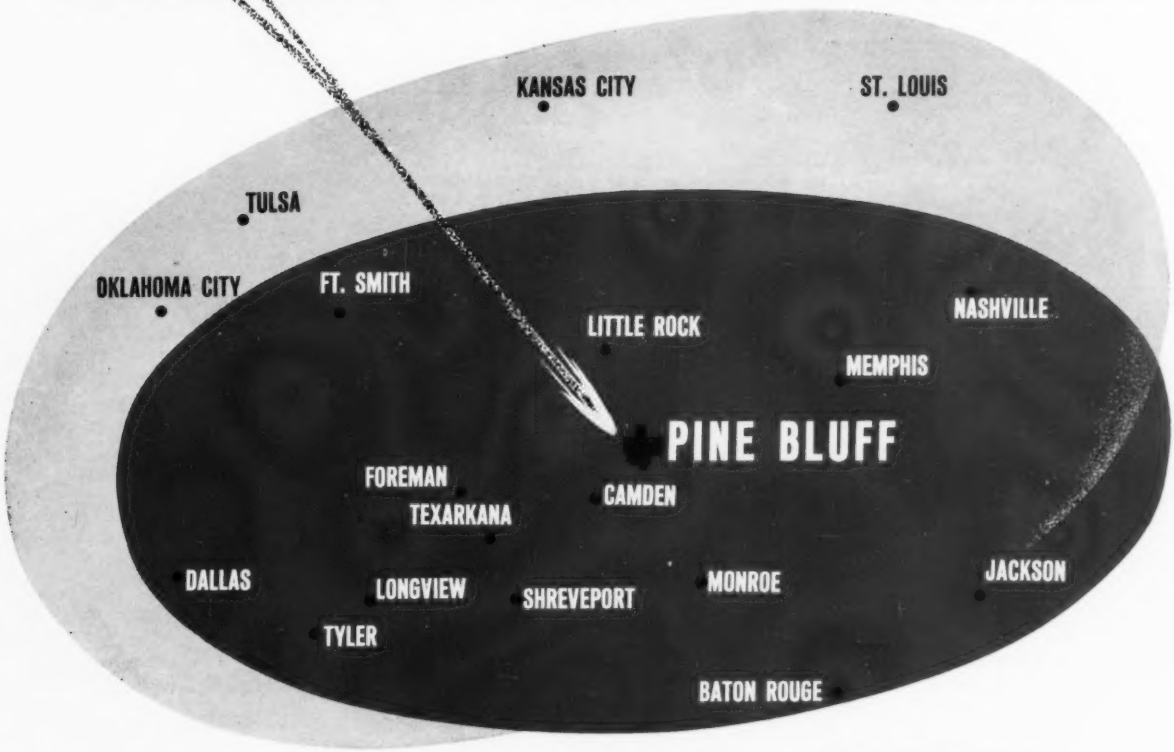

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After Closing

Fairfield Buys "Powco"

The Fairfield Chemical Division of Food Machinery & Chemical Corp., has purchased the inventory of insecticide and other pesticide concentrates of the Powell Division of the Olin-Mathieson Chemical Corp., Baltimore, according to John Rodda, general manager of the Fairfield Division. The purchase also includes the well-known "Powco Brand" trade mark for pesticides which was originally the mark of the former John Powell & Co., which firm was purchased by Olin-Mathieson several years ago. The inventory purchased by Fairfield comprises household and industrial insecticides and other pesticides. Although Olin-Mathieson will no longer be in the household and industrial insecticide concentrate business, they will continue the manufacture of DDT.

—★—

Weed to Fairfield

Dr. Alfred A. Weed, most recently supervisor of household insecticide sales for Olin-Mathieson Chemical Corp., New York, with headquarters in Asheville, N. C., late last month joined the Fairfield Chemical Division of Food Machinery and Chemical Corp., New York. A graduate entomologist, he received his Ph.D. from the University of Wisconsin, where he also did his undergraduate work. In 1928 he joined John Powell & Co., which had been started five years earlier. As an entomologist with the Powell company he set up one of the second Peet Grady chambers for testing insecticides in the U. S. He was also instrumental in introducing changes in the Peet-Grady technique which were later adopted universally.

In 1940 Mr. Weed was elected vice-president in charge of research for the Powell company. Following Mr. Powell's sale of his interest in the firm in 1949, Mathieson Chemical Co. acquired John Powell & Co. on May 1, 1953. Later, when the Olin-Mathieson

Dr. Alfred A. Weed

merger took place in 1954, the Powell company became a division of Olin-Mathieson.

In his new post, Mr. Weed will serve as a consultant and special assistant to John A. Rodda, head of Fairfield Chemicals, and will concentrate on working with pesticide formulators.

—★—

Chem-Therm Reopens

Chem-Therm Manufacturing Co., Inc., Monrovia, Cal., opened rebuilt and expanded facilities last month. The firm, which manufactures cleaning compounds, industrial steam cleaners, and automatic laundry equipment, under the "Chem-Therm" tradename, had been destroyed by fire.

According to Max C. Thompson, owner and president, total new facilities include 29,750 square feet of floor space.

—★—

Wallerstein Names Agent

Wallerstein Co., Inc., New York, has appointed Bowman Feed Products, Inc., Holland, Mich., as exclusive manufacturer's agent for "TS-3", a new product for use in the sanitary chemical field, it was announced in November by Arthur C. Emelin, Wallerstein president. "TS-3" is a balanced mixture fo bacterial enzyme systems and microorganisms developed by Wallerstein for the correction of septic tank and drainpipe problems.

Bowman will offer the product as well as formulations incorporating it to sanitary chemical manufacturers.

—★—

"Air Gene" Sales Up

A consumer panel of the Chicago *Tribune* reported last month that "Air Gene" room deodorant manufactured by B. T. Babbitt, Inc., New York, has attained a 13.4 per cent share of the market in that city for room deodorants. The panel is a research group which measures the share of market for a variety of products. "Air Gene" is reported to have achieved this percentage within five months of its introduction in Chicago. Another leading room deodorant, on the market for approximately five years, was said to have 14.1 per cent of the market.

—★—

Union Carbide Shift

Top executive changes were announced last month by Union Carbide Corp., New York. Morse G. Dial, president, has assumed the newly created position of chairman of the board and continues as chief executive officer. Howard S. Bunn, executive vice-president, becomes president. Kenneth H. Hannan continues as executive vice-president and Birney Mason, Jr., vice-president, becomes executive vice-president. Mr. Mason and Kenneth Rush, vice-presidents, were elected to the board of directors.

—★—

Fat & Oil Group Nominates

The nominating committee of the Eastern Fats & Oils Association, recently presented a slate of officers and directors to serve in 1959.

Included are: President, Martin J. Rubin, H. M. Rubin & Co.; 1st vice-president, Nicholas Biddle, Lever Broth-

ers Co.; second vice president, William L. Floyd, Zimmerman Alderson Carr Co.; secretary, Robert W. Wolfe, Durkee Famous Foods, and treasurer, David Rothschild, Lincoln Farm Products Corp.

Nominated as directors are: Frederick Baum, L. Pasternak Co.; Richard Forti, Bunge Corp.; Carl Reimold, Woburn Chemical Corp.; John MacDonald, Francis I. duPont & Co.; C. R. Berg, New York Produce Exchange; Robert H. Lake, Procter & Gamble Manufacturing Corp.; Robert J. Roberts, Emery Industries, Inc.; and L. S. Wong, Pacific Vegetable Oil Corp.

—★—

Fuld Appoints Levin

Robert L. Levin has been named southern area sales representative for Fuld Brothers, Inc., Baltimore, it was announced in November by the company. With Fuld in the same capacity in Canada for the past two years, Mr. Levin succeeds Moe Sigelbaum, who has left the firm. Before joining Fuld, Mr. Levin was part owner of Carlea Janitor Supply Co. in Baltimore and has had about 22 years experience in the chemical specialties industry.

—★—

Aniline Names McNulty

Herbert W. McNulty recently was appointed assistant manager of market research for the National Aniline division of Allied Chemical Corp., New York.

Previously supervisor of market development for the technical division of Pennsalt Chemicals Corp., Mr. McNulty was a member of the product-development and sales departments of Allied's Solvay Process Division from 1951 to 1956.

—★—

Nelson Named by Emery

Albert A. Nelson has been named commercial research manager of Emery Industries, Inc., Cincinnati, according to a recent announcement by Lee F. Church, controller. Mr. Nelson conducts market studies, sales analysis, and profit and pricing studies.

Before joining Emery, he conducted sales research for the Gibson Art Co., and prior to that he was a buyer for Procter & Gamble Co.

Colgate Appoints Matthews

F. Scott Matthews has recently been appointed product manager in the household products

F. Scott Matthews

division of Colgate-Palmolive Co., New York, it was announced by J. P. Kauffman, director of marketing for the division.

Mr. Matthews is responsible for advertising and merchandising of "Fab" detergent and reports directly to D. A. Wells, general product manager.

Previously Mr. Matthews was account executive for the soap and food accounts of a New York advertising agency.

—★—

Hartz Joins Prentiss

George Hartz, formerly New York area sales representatives for Olin Mathieson Chemical Corp., New York, has just joined the sales staff of Prentiss Drug & Chemical Co., New York. Mr. Hartz, a graduate of Pratt Institute in industrial chemical engineering, has been in the insecticide industry since 1934.

George Hartz

Following his graduation from Pratt, he did graduate work at Brooklyn Polytechnic Institute. In 1934 he joined Seil, Putt, Rusby, New York, official analysts of pyrethrum and rotenone imported into the U. S. Mr. Hartz conducted these analyses from 1934 until 1940, when he left to join John Powell & Co., New York insecticide formulating firm, as chief chemist. During the next seven yearfs with Powell he conducted research and development work on aerosol grade pyrethrum supplied to the Armed Forces from 1942 until 1946 and in the post war years. In 1947 Mr. Hartz left the Powell company and joined Orbis Products Co., New York. In 1950 he rejoined John Powell & Co., which had been acquired the year before by Mathieson Chemical Co. and handled agriculture sales. In the following year he transferred to aerosol and household insecticide sales.

—★—

New Hard Duroxon Wax

A new and harder grade of emulsifiable Fischer-Tropsch wax is now in full scale production at the Krupp chemical plant in Western Germany, it was announced last month by I. Y. Straus, president of Dura Commodities Corp., New York. Dura is North American agent for Krupp's Fischer-Tropsch waxes.

The new material, desigaated "Duroxon J-324 V," is very hard (needle penetration 0 to one), has a low ash content, high melting point, and narrow melting solidification range. It is claimed to be practically odorless, the first emulsifiable Fischer-Tropsch wax to exhibit this property.

The new extra hard wax is intended to supplement "Duroxon J-324" in certain applications in the polish and other specialties industries.

300 at Givaudan Party

More than 300 members of the soap, perfume, cosmetic and allied industries attended the annual Fall reception and cocktail party given by Givaudan-Delawanna, Inc., New York, last month at the University Club in New York.

The reception was held in honor of Andre Givaudan who was visiting the United States.

—★—

Breck Appoints O'Brien

J. William O'Brien has been appointed to the newly created post of assistant field sales manager for John H. Breck, Inc., Springfield, Mass., it was announced last month.

At the annual Givaudan-Delawanna party at the University Club, late last month in the top photo Ernest R. Durrer, president, and Andre Givaudan, head of the Swiss parent organization, chat with G. B. Livesay of Colgate-Palmolive Co. George Warren of Givaudan in background at left. In center photo are, l. to r. William Black of Warner-Lambert Research Institute, George Warren of Givaudan, and Henry Meade and Everett Kilmer of Lever Brothers. Overall shot of group in bottom photograph.

New Babbitt Agreement

An agreement involving B. T. Babbitt Co., and Hudson Pulp & Paper Corp., both of New York, with the Detroit Street Railway was signed last month permitting free rides on transit buses in exchange for coupons from the products of both companies.

Ten household products are being tagged with the coupons, any four of which are good for one bus token. An intensive advertising campaign promoting the Detroit Street Railway is accompanying the program.

Babbitt products featured in the promotion are "Bab-O," "Glim," "Cameo Copper Cleaner," "Hep Oven Cleaner," and "Air-Gene" room deodorant. The agreement is similar to those with transit companies in New York, Philadelphia, Boston, and Cincinnati.

—★—

Toilet Goods Booklet

The Toilet Goods Association is currently distributing to schools and colleges six booklets giving popular information on the history, use, manufacture and marketing of toilet goods. The series consists of the following titles: Fragrance; Grooming; Hair; Make-Up; Manicure; and Treatment. In each booklet history is treated by Jill Jessee, author and consultant; use by Myra N. Conklin, writer and cosmetic expert; manufacture by H. D. Goulden, scientific director of TGA; and marketing by S. L. Mayham, executive vice-president of TGA.

TGA will not permit anyone but its own office to distribute these booklets. However, it will consider written requests, signed by officers of member companies, for single sets to be used through company libraries etc. The booklets will not be furnished to non-members nor to non-member advertising agencies. Distribution to schools and colleges will take strict precedence. Address of TGA is 1270 Avenue of the Americas, New York 20.

Carr of Dearborn Elected

Robert A. Carr, president and director of Dearborn Chemical Co., Chicago, was elected chairman

Robert A. Carr

last month of Railway Progress Institute, a national association of the railway equipment and supply industry. The association is composed of more than 90 railway supply companies.

Mr. Carr has been president of Dearborn, since 1944. The firm manufacturers water softening materials, railroad and industrial cleaning products, and rust preventives.

—★—

Atlas Names Arasim

Stanley Arasim, Jr., has been named marketing research manager in the product development department of the chemicals division of Atlas Powder Co., Wilmington, Del., it was announced last month by F. Faxon Ogden, department director.

With the company's marketing research section since 1957, Mr. Arasim was previously a market and product development specialist with Atlantic Refining Co. He has also been associated with Arthur D. Little, Inc.

—★—

Dow Assigns Two

James W. Harris has been appointed assistant to the sales manager of the chemicals department, and Earl H. Farnham has been named manager of the newly named organic chemical intermediates product group succeeding Mr. Harris, it was announced last month by Dow Chemical Co., Midland, Mich. The product group was previously known as organic chemicals.

Mr. Farnham had headed the sale of glycols and derivatives at Dow since 1951. He joined the firm in 1945 as a salesman on the Chicago sales staff.

Mr. Harris has been with Dow since 1932 and was engaged in sales development activities until 1939. Since then he has been associated with industrial chemicals sales activities.

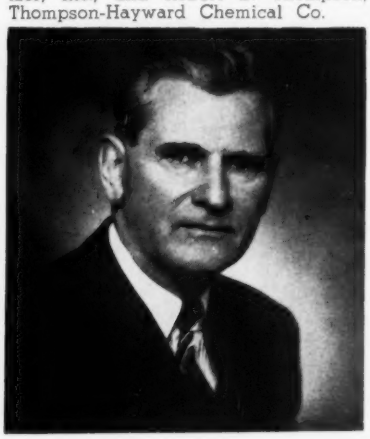
—★—

New Calgon Bleach

A powdered bleach said to have superior whitening properties has been developed by the Calgon Co., Pittsburgh, and is tradenamed "Calgon Instant Dry Bleach." Claimed to be quick acting and safe for all bleachable fabrics, the product is a combination of recently developed chlorine liberating material and "Instant Calgon" dry bleach.

Complete information is available from the laundry department, Calgon Co., Box 1346, Pittsburgh 30, Pa.

Jackson V. Vernon, vice-president of Food Machinery and Chemical Corp., New York, was re-elected president of the National Agricultural Chemicals Association at its annual meeting in Savannah recently. Also re-elected were Charles H. Sommer, Monsanto Chemical Co., vice-president; Lea Hitchner, executive secretary and treasurer; and Miss Lee H. Grobe, assistant treasurer. Four new board members elected were: Evan T. Collinsworth, Jr., Velsicol Chemical Corp.; William R. Dixon, Dow Chemical Co.; Frank M. Feffer, Arizona Fertilizer, Inc.; and Robert S. Thompson, Thompson-Hayward Chemical Co.



Name Beauty Consultant

Antoinette Fath has been appointed a beauty consultant and demonstrator in the Caribbean

Antoinette Fath

area for Dorothy Gray, Ltd., New York, it was announced last month by Joseph A. Moran, advertising manager of the international operations division of Lehn & Fink Products Corp., New York. Miss Fath left recently to make her headquarters in Havana.

In her new post she will train salesgirls in the use of Dorothy Gray beauty preparations. Miss Fath has been with the company for more than ten years.

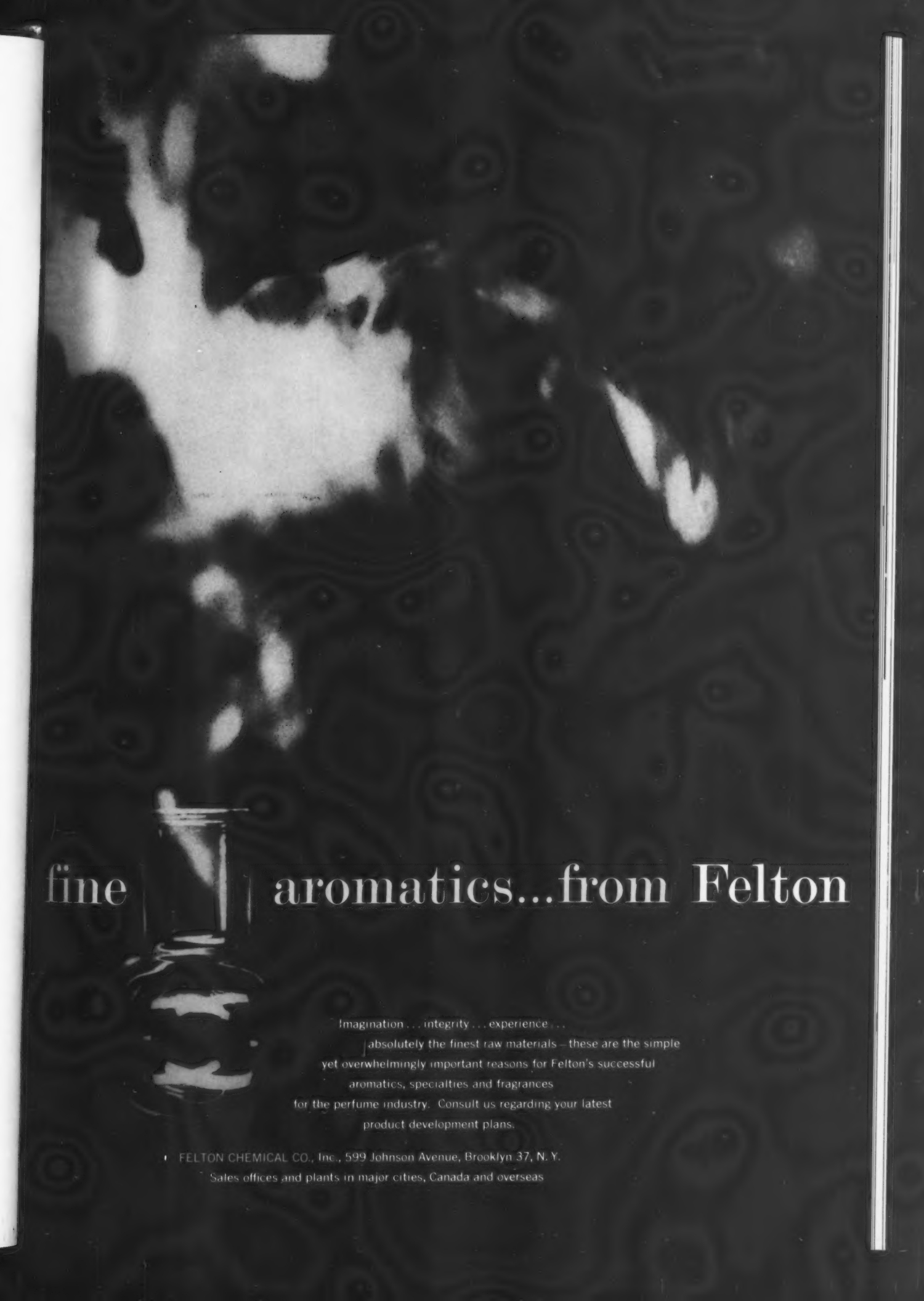
—★—

Du Pont Assigns Four

New assignments for four men in biological chemical sales have been announced by the Du Pont Grasselli Chemicals department, Wilmington, Del.

Merle E. Ward has been assigned to Wilmington as general product manager of agricultural chemicals, succeeding Jack M. Zimmerman, who moves to the post of assistant district sales manager in Houston, Tex. Previously Mr. Ward was manager of agricultural chemicals for Du Pont Co. of Canada.

Dale E. Wolf has been transferred from assistant district sales manager in Philadelphia to the same position in the Atlanta district. Eugene F. Clement, who has been a Du Pont sales representative in the intermountain area, has been transferred to Atlanta.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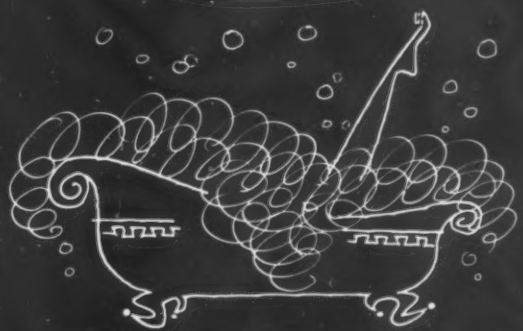

BUBBLE BATHS—Foaming power is boosted and foam stability is greatly improved by small percentages of AEROSOL 22. The *solubilizing* properties permit wide latitude in the formulation of surfactants, perfumes and colorants — and insure top effectiveness even in hard water.

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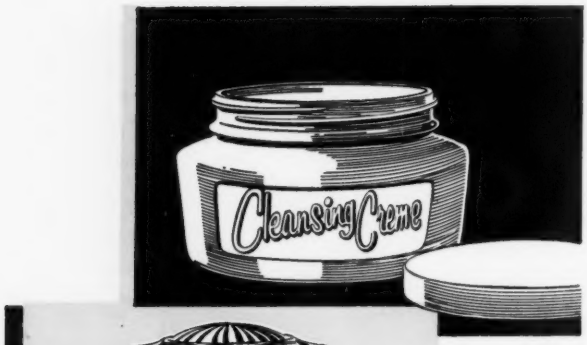

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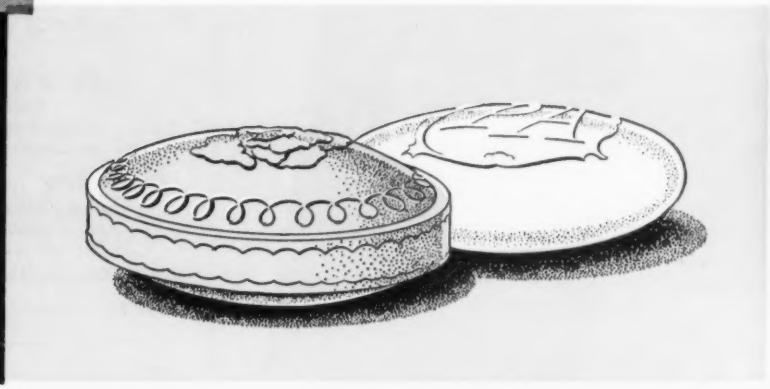

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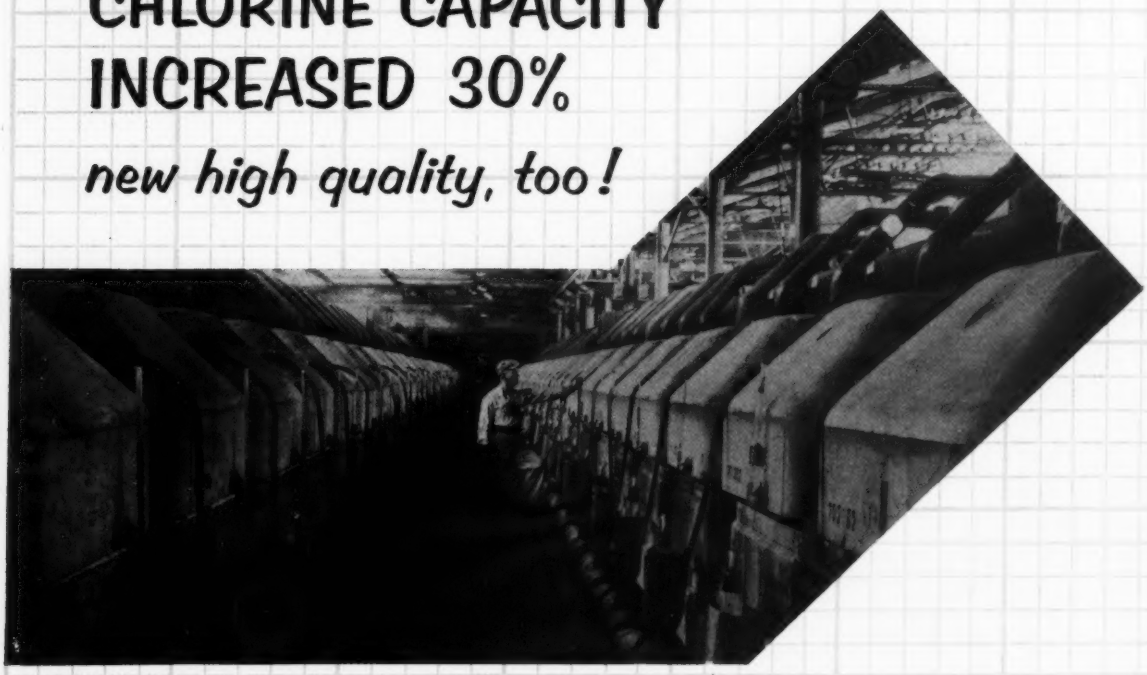

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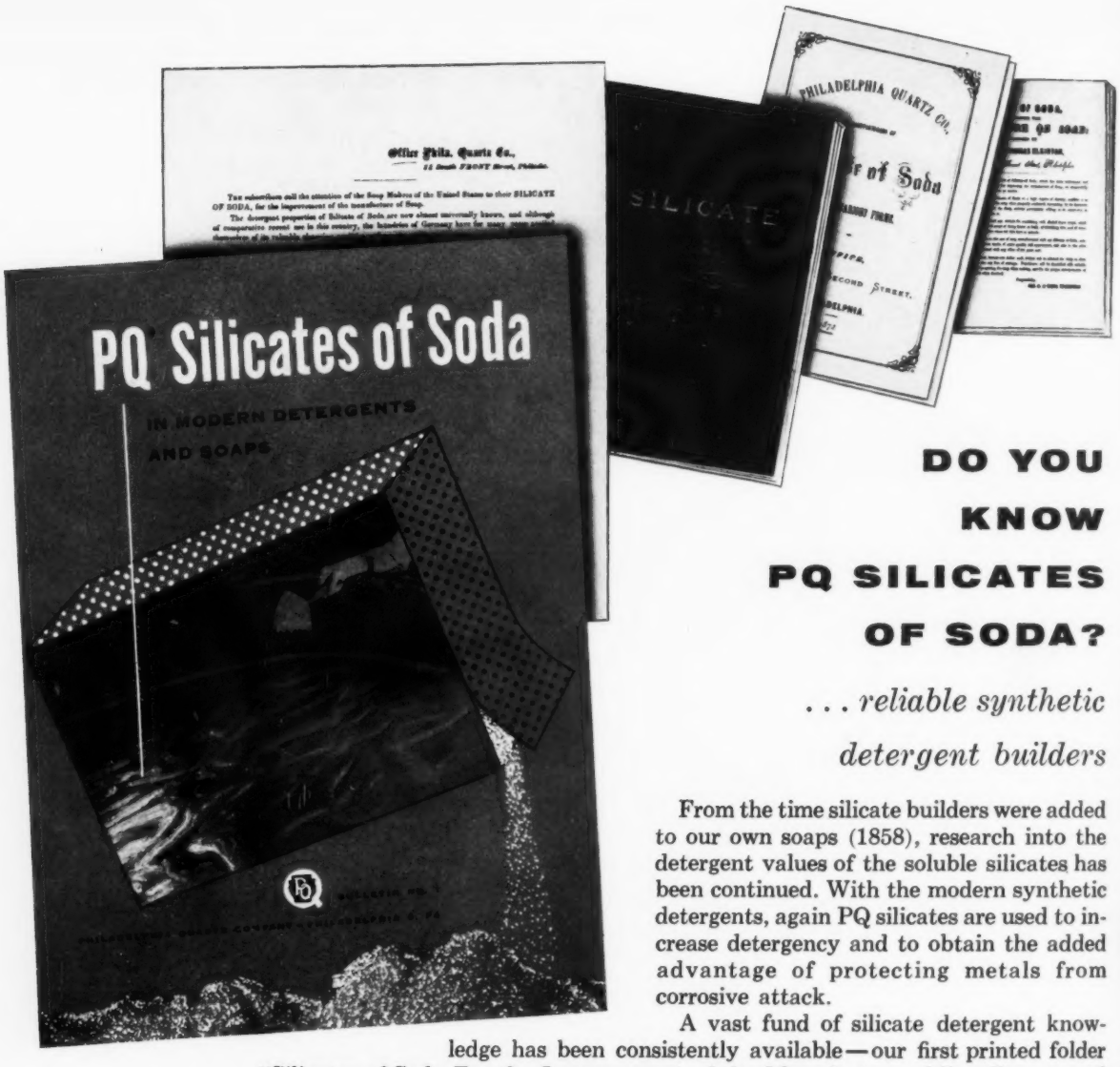

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A vast fund of silicate detergent knowledge has been consistently available—our first printed folder "Silicates of Soda For the Improvement of the Manufacture of Soap" appeared in 1864. Do you have copies of current PQ publications on soluble silicates in soap and modern detergents? Check any of the following which is of interest to you.

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Phase Study of Commercial Soap-Alkaline Electrolyte-Water Systems
A Phase Study of Sodium Palmitate-Alkaline Electrolyte Water Systems
Silicates in Soaps
Solubility Study of an Aqueous Potassium Laurate-Potassium Silicate System
Potassium Silicates in Soaps
Silicate of Soda as a Detergent
PQ Silicates of Soda in Soaps and Modern Detergents
Suspending Action of Alkaline Electrolytes on Ilmenite Black
Solubilization and Cosolvent Effect with Sodium Stearate
Alkyl Aryl Sulfonate Builder Mixtures
Viscosity of Potassium Soap-Potassium Silicate Mixtures
Viscosities and Solubilities of Synthetic Detergent Mixtures Containing Soluble Silicates
Silicates as Corrosion Inhibitors in Synthetic Detergent Mixtures

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BEAD
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Nacconol NRSF
Nacconol NR
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Nacconol MX Granular
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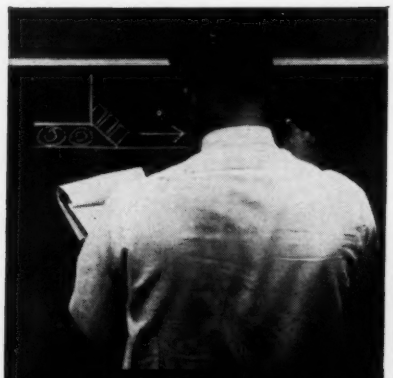
HOW TO PLAN NEW STRATEGY



John B. makes $3-a-ton handling cost disappear. John's company has used solid caustic soda for years even through many increases in annual requirements. John sat down with his Hooker representative and doodled with some figures. He found that his company spends $4.00 on *in-plant* handling costs for every ton of caustic soda. The Hooker man showed John B. that he could cut this to $1.00 a ton by switching from solid to 50% liquid Hooker caustic.

Sam van R. finds a way to step ahead of competition. Sam's company repackages caustic soda for the specialty trade. Through the years it has specialized in regular flake. When Sam's Hooker man stopped in and discussed the fact that Hooker offers *four* flake sizes, Sam got an idea. He figures that if his company offers all four sizes to the market—a size that meets the *exact* needs of a particular job—it will get a big jump on competition.—How many sizes do you offer?

Fred P. makes a switch that saves him five figures. Fred's Hooker man pulled out a booklet and turned to a nomograph on page 13. Fred checked a few figures in his own books and drew a line on the nomograph. This simple procedure showed Fred that by switching from 50% caustic to Hooker's 73%, he would save enough on freight alone to pay for any extra equipment he might need and still show a solid black line on his company's ledger for years to come.

...with Hooker caustic soda for profit • Your Hooker man has a hatfull of ideas which you can use to amaze friends and influential people.

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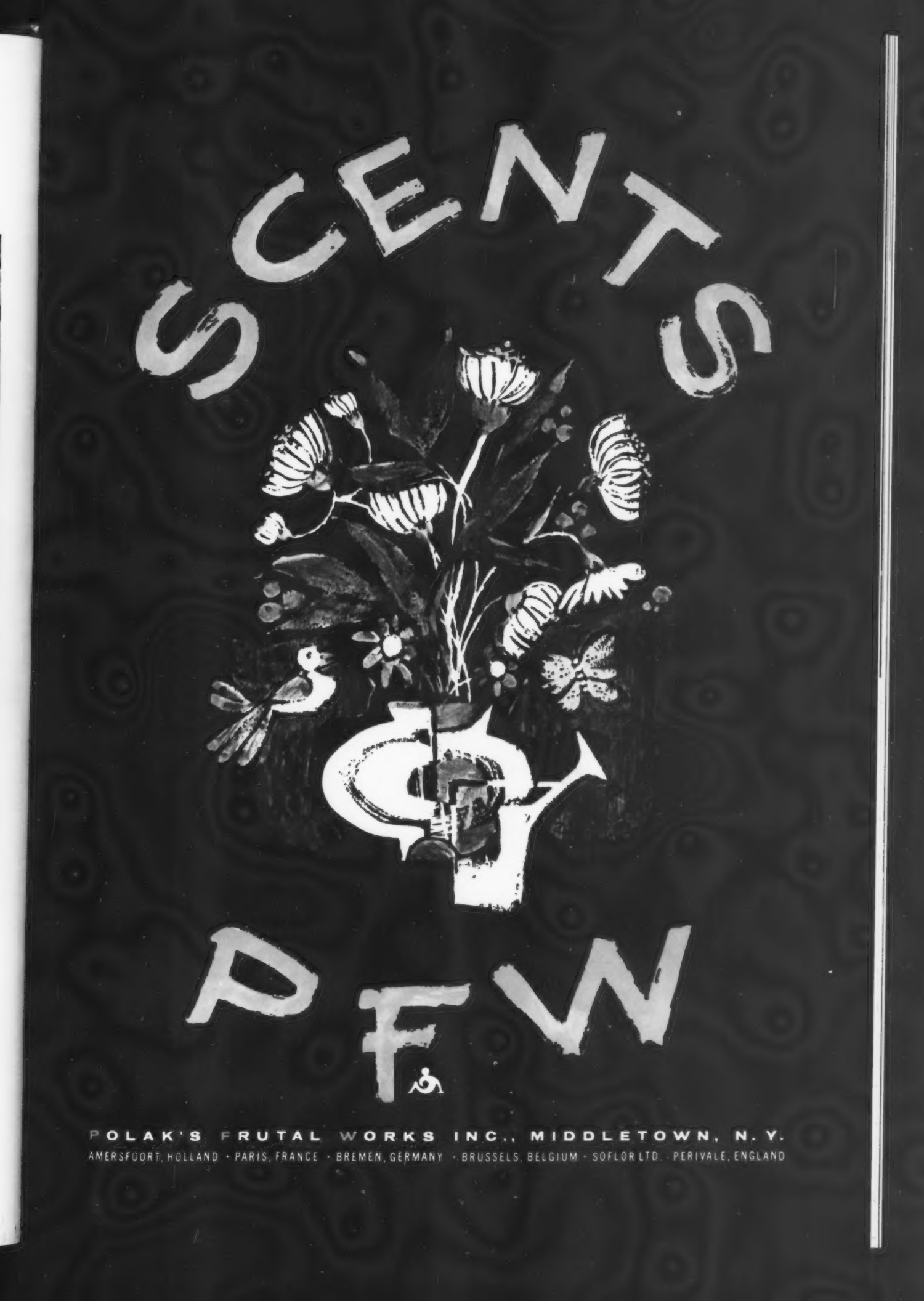

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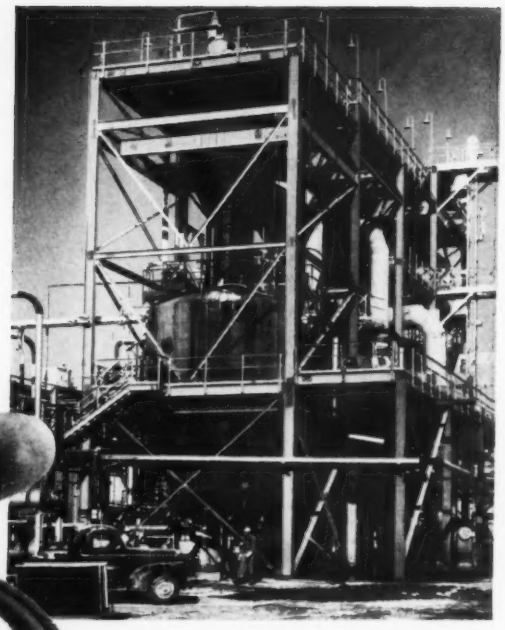
GRANULAR...in special uniform meshes in a variety of grain sizes



Vacuum crystallizers are an important segment of the new, ultra-modern, refinery recently completed and on stream at Boron, California.

Granular borax improves powdered hand soaps

Are you making powdered hand soaps? Or cleansers? Evaluate the use of granular borax in your product! Others have found that borax boosts the cleansing power . . . makes soap work better in any water. So, today we're producing more granular borax than ever before; witness our new vacuum crystallizing plant shown above. It is part of the newly expanded refinery built to assure our customers of a dependable basic source of quality borates . . . in every form for every possible use. Get in touch with us now for helpful suggestions. You'll get sound advice. We've been *specialists* in borates and boron products for more than half a century!

. . . and here are **borates** . . . of interest to Chemical Specialties Manufacturers . . .

GRANULAR BORAX . . . *in special screen sizes*
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Few, if any, formulators can afford to tolerate water corrosion in their processing. It takes a super concentrate, like Pilot ABS-99, to cut out such costly damage.

With ABS-99 you get extra activity, not water.

That's because Pilot ABS-99 is 98% pure—so pure, in fact, that it may be kept in *plain steel* containers!

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PILOT *California Co.*

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Alone or in combination with each other, these versatile non-ionic surface-active agents can give your cleaning compounds the exact cleansing, foaming, cloud point and other characteristics you desire.

TRITON X-100, X-102 and X-114 are water-soluble surfactants with superior detergency values. On practically all surfaces, they are more effective than anionic or cationic surface-active materials. TRITON X-45, TRITON X-15 and TRITON X-35 are oil-soluble . . . are effective in reducing interfacial tension and in emulsifying oils in water.

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Want more information or formulating help? Write us on your company letterhead.

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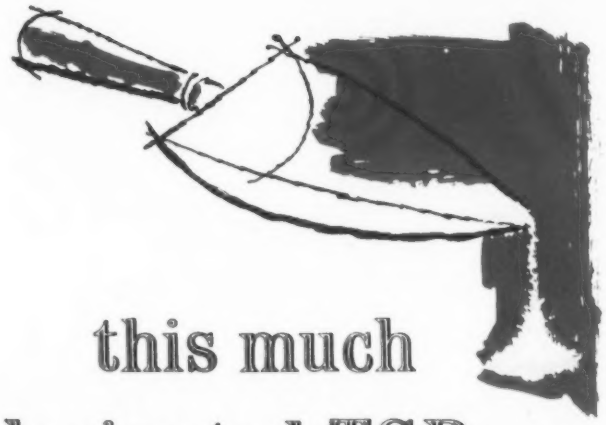


this much Chlorinated TSP...

Compounders of detergents for mechanical dishwashers know that about a 50/50 mixture of Victor chlorinated trisodium phosphate and other phosphates makes today's dishwashing job a real snap . . . even on "the night before Christmas".

Thanks to this remarkable chemical, glassware, dishes, and flatware are washed, rinsed, and dried without telltale spots or rings . . . and the chlorine provides an antiseptic plus that's hard to beat.

It's hard to beat Victor for service, too! Suppose you need a sample of a certain Victor chemical to work on some special project. If you tell us which one to send, we'll have it on its way before you can say, "It pays to see Victor". Write on your company letterhead to: Victor Chemical Works, Box 271, Chicago 90.

VICTOR
Dependable Name in Chemicals
for 61 Years

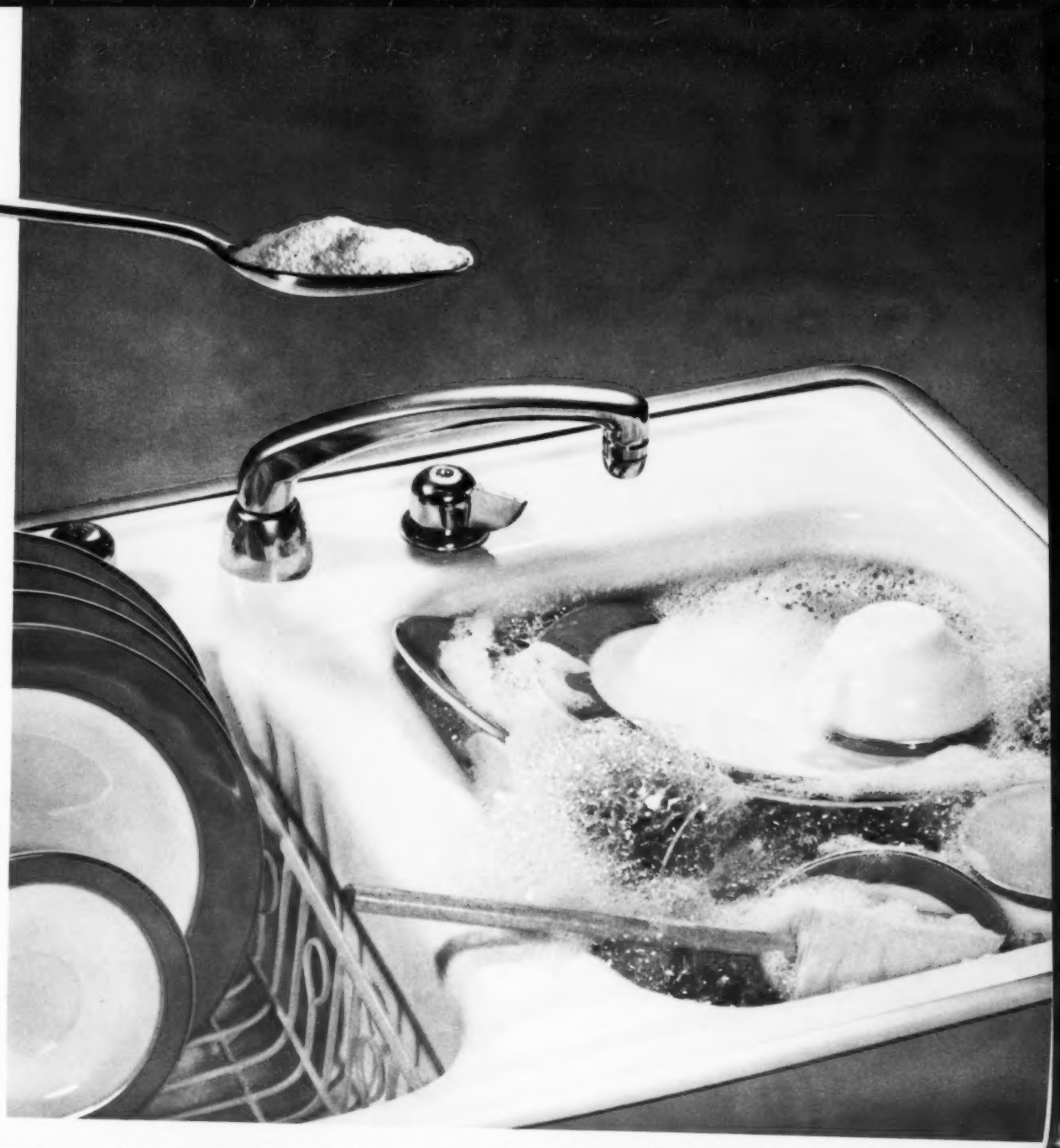
this much Tripoly...

It takes about one teaspoonful of Victor sodium tripolyphosphate, in combination with other chemicals, to knock the spots off a sinkful of dirty dishes. That's typical of today's dynamic detergents.

Soapers select sodium polyphosphates, either tripoly or tetra, for their synergistic action with detergents . . . a powerful, outstanding advantage of these versatile chemicals.

"Syndets" often require certain custom specifications to provide the best compatability with other ingredients—and that's where Victor's technical service department shines. These trained specialists can usually come up with the right answer in a matter of a few days.

If your company needs sodium tripolyphosphate for a specific use, we welcome the chance to show how to clean up the problem. Write on your company letterhead to Victor Chemical Works, Box 271, Chicago 90. You'll see—and *soon*—why so many say: "It *pays* to see Victor."



Linalool 'Roche' is uniform — unvarying in odor — in constant supply at a stable price —

Linalool 'Roche' is more stable than natural linalool. For existing compounds, we can assist you in adjusting Linalool 'Roche' to simulate natural linalool. Also available is synthetic Linalyl Acetate 'Roche' with an equally high quality odor. 'Roche' Aromatics are available through principal essential oil distributors. AROMATICS DIVISION, HOFFMANN-LA ROCHE INC, Nutley 10, N.J.

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Completely new, inexpensive material. Has basic rose type of odor, resembling rhodinol formate or geranyl formate, but with good green note. Aldehyde-like top note. Stable in soap.

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new

A SUPERIOR wetting agent FOR CAUSTIC SODA

For use in solutions containing 3 to 23 per cent Caustic Soda

MIRANOL J2M CONC. is the latest development of the well known Miranol line. It is a superior wetting agent principally for use in Caustic Soda solutions but also for solutions containing a high solids content, such as other alkalies, electrolytes or acids.

2% MIRANOL J2M CONC. dispersed on Caustic Soda flakes will impart wetting qualities to 3 to 23% solutions.

Solutions of caustic soda normally have surface tensions of over 70 dynes-cm, whereas the addition of MIRANOL J2M CONC. will reduce the surface tensions to as low as 30 dynes-cm.

MIRANOL J2M CONC. is effective at low concentrations. It is not precipitated in boiling caustic soda solutions and retains its full or complete wetting power in caustic soda solutions re-concentrated by boiling and water evaporation. MIRANOL J2M CONC. is a non-foamer in warm or hot caustic soda solutions of any concentration. It will foam just slightly in cold caustic soda solutions above 15%.

uses

WASHING OF MILK AND SODA BOTTLES

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ALKALINE DEGREASING

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ALKALINE PAINT STRIPPERS

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FRUIT AND VEGETABLE PEELING

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MERCERIZATION OF COTTONS

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ANY OTHER TREATMENT INVOLVING THE USE OF CAUSTIC SODA

MIRANOL J2M CONC. . .

. . . does not discolor Caustic Soda flakes.
. . . substantially reduces dusting of the flakes.
. . . achieves more rapid solubility.
. . . does not increase hygroscopicity.
. . . flakes do not appear soggy (providing good mixing practices normally required in the handling of Caustic Soda flakes are employed)

Send for sample and complete information

THE MIRANOL CHEMICAL COMPANY, INC.
275 COIT STREET, IRVINGTON, N. J.
Tel: ESsex 4-2500

miranol

J2M CONC.*

*U. S. and Foreign Patents

Here's why WEST END can answer any inquiry immediately!

When you phone an order or request information, the Sales Office Manager in Oakland with whom you speak can contact the plant at WEST END immediately. He talks by private wire teletype with the Production Manager on product availability. . .. Shipping Superintendent on packaging, transport facilities, dates and car numbers ... Technical Director on detailed specifications ...Plant Manager on the development of products to meet new applications or specifications.

An answer or firm commitment is given immediately. It is relayed to you often while you are still on the phone.

WEST END 's Sales Office Manager sales representatives and plant executives work together as a team manning a system that is, in our opinion, uniquely outstanding in the chemical industry. Their confidence in the efficiency of this system is reflected in the enthusiastic, helpful and friendly manner in which they promptly serve you . . . our customers.

WEST END CHEMICAL COMPANY
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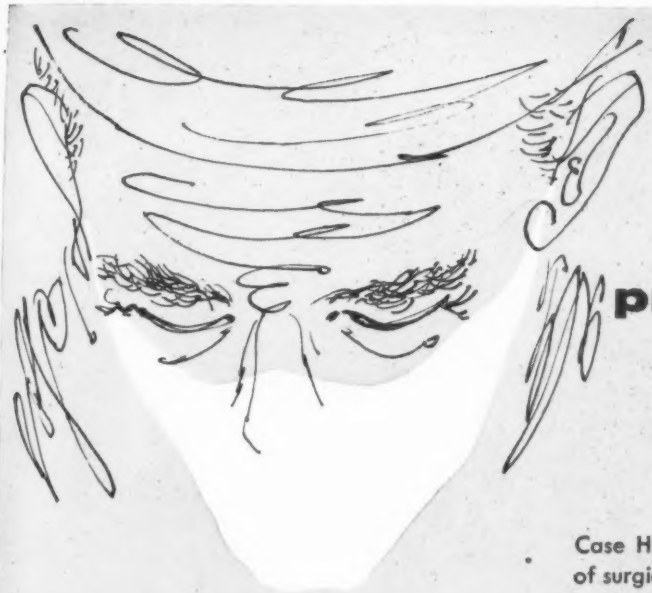

you, too, can profit from stability in OLEIC ACID

here's how Emersol® 233 LL Elaine increases shelf-life of a surgical soap

Case History No. 83-02: "A large manufacturer of surgical and germicidal soaps continually had problems of storage stability of a high grade surgical soap. The development of rancidity and changes in color were particularly disturbing to users of the soap especially where cleanliness and sterilization are imperative. Upon investigating Emersol 233 LL Elaine, this manufacturer found it so superior to the double distilled oleic acid he had been using, that it eliminated all problems of instability and odor development. Emersol 233 was also tried in other germicidal soaps in this manufacturer's line and the improvement in stability was again outstanding."

This is but one example of how outstanding stability improved a group of products. In any product, the replacement of ordinary oleic acids by a comparable Emersol grade prevents the development of rancid odors and avoids discoloration, breakdown of emulsions, changes in texture, and any deterioration of performance. So, why risk your products' good reputation when you can guard against failures so easily—by always buying the Emersol brand when you need oleic acids.

Emery

FATTY ACID
SALES DEPARTMENT

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio

New York • Philadelphia • Lowell, Mass. • Chicago • San Francisco • Cleveland • Ecclestone Chemical Co., Detroit
Warehouse stocks also in St. Louis, Buffalo, Baltimore and Los Angeles
Export: Carew Tower, Cincinnati 2, Ohio
In Canada: Emery Industries (Canada) Ltd., 639 Nelson St., London, Ontario.

Emery Industries, Inc.
Dept. S-12, Carew Tower
Cincinnati 2, Ohio

Please send me 20-page Emeryfacts titled "Emersol Oleic Acid."

Name.....Title.....

Company.....

Address.....

City.....State.....

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eft you, we hope,
fa happy load of
n
orda good wishes
or the Holidays almost here,
a
nd the Happy Days coming
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ll next year

Norda®

Norda makes good scents

The first improvement in metasilicate in 25 years!

Regular sodium metasilicate pentahydrate

New Cowles Crystamet 2040

Free Flowing!
Dust Free!
Blends and Mixes Easier!

Crystamet 2040 is the name of the new Cowles sodium metasilicate pentahydrate that resists caking, mixes quickly and remains dust free.

Granules are rounder, smoother, more uniform in size . . . the result of a new exclusive Cowles process.

Supplied in both 20-40 and 10-20* ranges*

**U. S. Screen*

Write on your company letterhead for a sample of Crystamet 2040 or 1020 and a technical data sheet.

Cowles **CHEMICAL COMPANY**

7020 Euclid Avenue • Cleveland 3, Ohio

BRING OUT THE BEST WITH CELLULOSE GUM

Long a standard ingredient in leading brands of conventional toothpastes, Hercules® cellulose gum (purified CMC) is now adding to the effectiveness of the new pressurized types.

As a stabilizer, cellulose gum maintains the consistency of the paste, preserves its whiteness and gloss, and increases its shelf life. Whatever your product, perhaps versatile cellulose gum can help make it better. Write for technical data.

HERCULES®
cmc

Virginia Cellulose Department

HERCULES POWDER COMPANY
INCORPORATED

900 Market Street, Wilmington 99, Delaware

VC58-4

. . . in brief

as the editor sees it . . .

PACKAGE . . . In the maze of modern merchandising, we often see changes made in this or that without apparent reason. Sometimes, it's a package which we thought was pretty good. But the great brains of the big companies decide it should be changed. So it's changed. We often wonder if there is a good reason behind the change, a reason which we in our lack of a deep and understanding knowledge of packaging do not appreciate. Or, we wonder, did some joker just have a brainstorm and a yen to spend a little company money.

Recently, the package for Camel cigarettes was changed. For forty years, they had used the same package. Then, all of a sudden, it's revised and revamped. When the new package, hit the market, the company was deluged with yowls from old Camel smokers. For some years, Camel had been the top cigarette seller and still is. So why "break up a winning ball team?" Why was the package ever changed when the old one was apparently so eminently satisfactory? We'll never know. Only, they are switching back in a hurry to the old package. And in this little tale, we have a hunch there lies a moral.

* * * * *

LABELS . . . The American housewife reads labels, recently said the president of a large advertising agency in an address before the National Wholesale Druggists Association. What's more, the aforementioned housewife has become a sophisticated consumer, a consumer who is "importantly four-dimensional"—whatever that means—and she is not impressed any more by the old hard sell which has been so characteristic of retail advertising during the past few years.

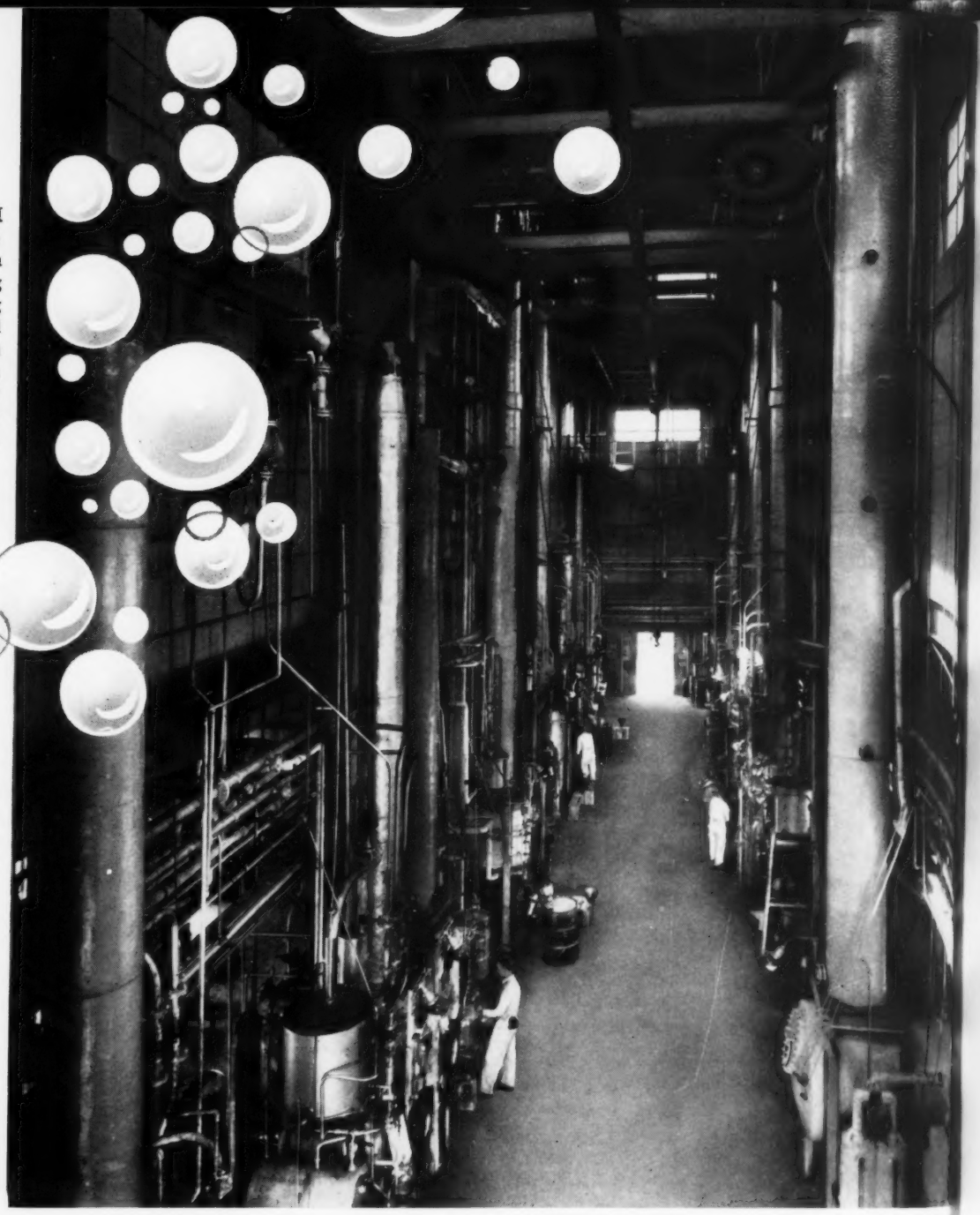
We assume that the gentleman was trying to say that Mrs. McGuff, the great American housewife about whom all these advertising fellows talk so much, is really a lot smarter than her mother or grandmother. Maybe he's right. She may be sharp as a tack, but when it comes to reading labels, we beg to differ with the gentleman. Everything which we have seen or heard about in recent years leads us to believe that the mythical lady does not read labels, never has read labels,—and, we almost said, never will read labels.

If labels were read, countless instances of misuse of common products would not be recorded. If labels were read, innumerable cases of silly complaints to manufacturers would never happen. So wether Mrs. McGuff is "importantly four-dimensional" or even five-dimensional, we still have a sneaking hunch that she thinks label reading is strictly for squares.

* * * * *

POPULATION . . . By 1978, the population of the U. S. will be 35 to 40 per cent larger than it is today. This, said Jesse W. Tapp, chairman of the Bank of America, in a recent address at the golden anniversary meeting of the Grocery Manufacturers of America, is the prediction of students of population trends. During these two decades, the work force of the nation will increase as rapidly as the number of consumers. And we may expect a strong stimulus to the private economy as a result of technological changes growing out of innumerable types of research programs. To achieve a genuine increase in the standard of living, we must concentrate on an improvement in worker productivity.

In short, not only will the American market for all types of goods be increased by more than one-third, but the anticipated improvement in over-all living standards will likewise help to



Distillation building (VAH Union Beach, N. J. plant) showing high column stainless steel fractionating equipment. Among numerous VAH technical evelopments, are new column packing techniques which have added considerably to the efficiency of many distillation processes.

Finer Fragrance **SELLS MORE SOAP**

Today's trend to upgrade the quality of perfume used in soaps, directly results in increased sales and greater brand loyalty. van Ameringen-Haebler, Inc. has contributed to the soap-maker's ability to achieve these results by the development, through constant research, of distinctly new and finer aromatics, through the production economies made possible by modern, large-scale processing equipment and up-to-date techniques ... and through the creation of lovelier soap fragrances by its staff of master perfumers.

van Ameringen-Haebler, Inc.

521 West 57th Street • New York 19, New York

expand this market. When 20 years looks like a long way to plan ahead, let's remind ourselves that 1938 which was 20 years ago, seems almost like yesterday as we look back. For those who have increased plant production and wonder where in heaven they are going to sell the output, the views of Mr. Tapp should be a consolation.

For certain consumer goods, and in these we include detergents, toilet soaps, and a host of chemical specialty products, 1978 could see a doubling of today's production,—and what is more important, consumption. Not only a marked population increase, but a sharp improvement in living standards which we feel is inevitable, will bring this increase in the output of nondurable consumer goods.

* * * * *

AEROSOL LABELS . . . At the risk of being accused of harping too long and too loud on the same subject, we once again want to warn aerosol marketers and fillers that the absence of precautionary labeling is too widespread for comfort. Our guess is that about half of the new aerosol products coming on the market are improperly labeled as far as precautions are concerned. Mostly, the fault lies in insufficient precautionary labeling. In a few instances, we have noted that no label precautions whatever appear on the package. And all this in spite of heroic efforts on the part of the Precautionary Labeling Committee of the Chemical Specialties Manufacturers Association.

Were these errors of omission confined wholly to fly-by-nights or to newcomers to pressure packaging or to firms without previous packaging and marketing experience, they might be understandable. But they are not. Some of our top names appear on improperly labeled aerosols. They should know better, but obviously they don't.

As we have pointed out before, proper labeling is one of the best means of protection against legal action for the manufacturer and marketer. But if anything happens to an aerosol which carries insufficient precautionary labeling or none at all, we have a hunch that neither the filler nor the marketer would have a single prayer if he were to defend a lawsuit, justified or otherwise.

DISINFECTANT SALES . . . Probably every hospital in the country and many abroad are highly conscious today of disinfectants. This was brought out two months ago at the conference of scientists held by the U. S. Public Health Service at Atlanta and was further emphasized more recently at a conference of doctors from six countries held in New York under the auspices of the World Medical Association.

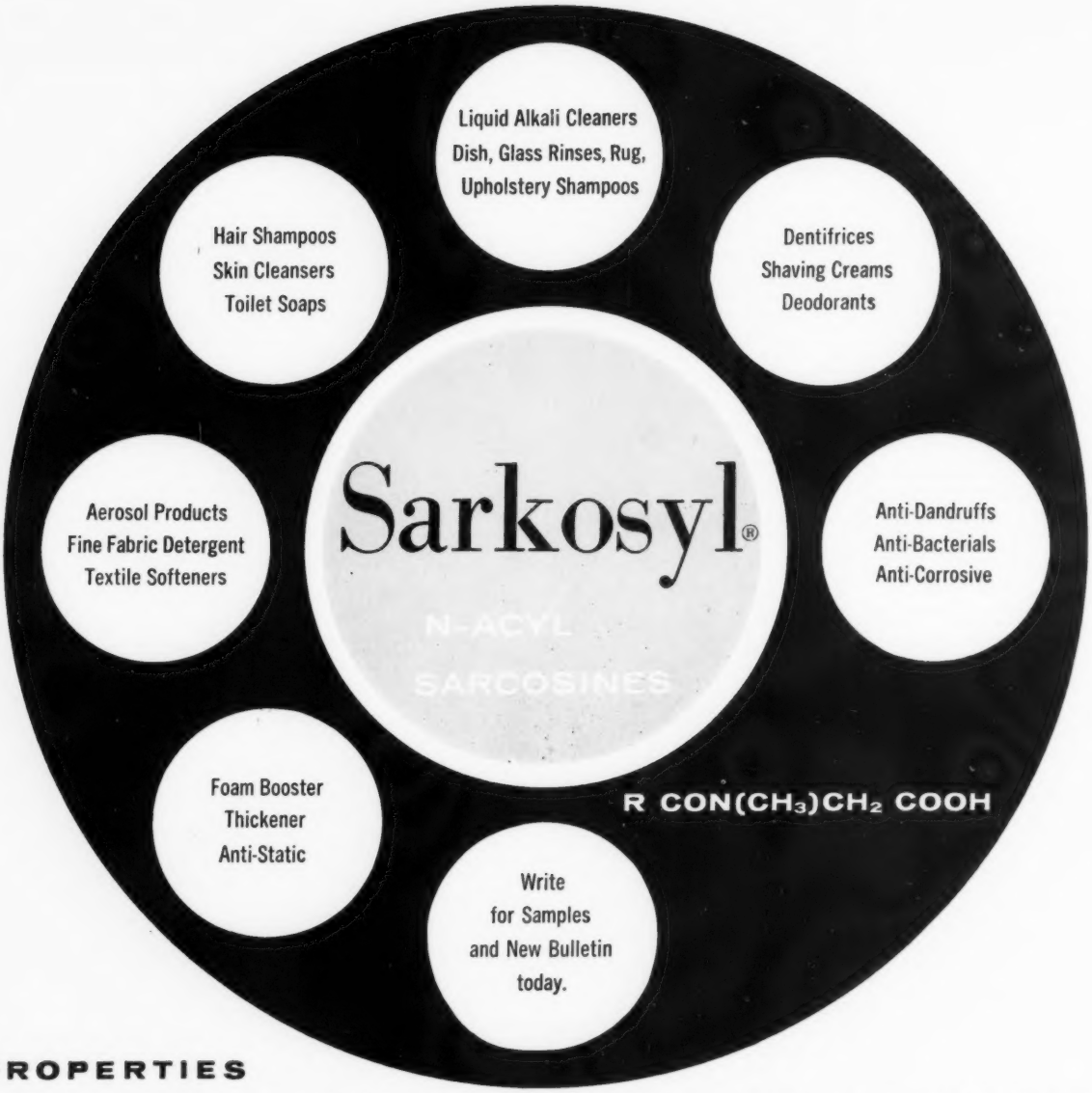
At the New York conference, a new technique for cleaning hospital floors was outlined. After floors and walls are scrubbed with detergent and washed with disinfectant, the floors are flooded with disinfectant solution to a depth of one-quarter inch. Most of this is removed with a wet vacuum, but puddles are left at doorways and other traffic places to disinfect wheels of carts, stretchers and the shoes of personnel.

This intensive battle against staphylococcal disease means materially increased use of disinfectants for some time to come. But what shall the local sanitary supply distributor recommend? We feel that manufacturers who have not as yet informed their distributors in detail as to the proper disinfectant to sell to hospitals, should do so at once,—that is if they want to take advantage of this expanded market. Some disinfectants are effective; others are not. Every distributor should know the facts now.

* * * * *

STINK . . . Stink in our opinion is one of our less pretty words. Certainly, it's not a word that's ordinarily associated with a picture of a beautiful bouquet of flowers, an advertising insert most exquisitely printed for one of our better known perfume materials houses. And, above all, an insert in one of our most plush beauty magazines. But it happened. The odor of the insert permeated the entire issue of the magazine, a pungent disagreeable odor which modesty forbids our describing here.

When we viewed the beautiful picture of roses, carnations, et al, we were quite forcefully reminded of the old bromide, "physician heal thyself." And if the perfuming doctor in question can't handle the problem, we know a couple of his competitors who would be delighted to lend a hand.



PROPERTIES

SARKOSYL surfactants are modified fatty acids in which the hydrocarbon chain is interrupted by an amidomethyl group. Physical and colloidal properties resemble those of the fatty acids, but the **SARKOSYL** products are more crystalline, more soluble (at acid pHs too), adsorb more strongly at interfaces. **SARKOSYL** acids and salts offer a range of solubility from mineral oil and silicones to 30% aqueous potassium hydroxide.

® *Geigy Chemical Corporation registered trade mark*

SPECIAL NOTE: Waterwhite, odorless, tasteless, low toxicity, anti-corrosive; synergist for lauryl sulfate.

	SARKOSYL NL30	SARKOSYL L	SARKOSYL LC	SARKOSYL O	SARKOSYL S
composition	sodium lauroyl sarcosine	lauroyl sarcosine	cocoyl sarcosine	oleoyl sarcosine	stearoyl sarcosine
concentration	30% aqueous sol.	95% min.	95% min.	95% min.	95% min.
setting point	—2°C	31°	19°	0°	50°
color	80 APHA max.	FAC 1	FAC 3	FAC 6	FAC 2
solubility: stoddard solvent	immiscible	130g./100g.	146g./100g.	miscible	5g./100g.

GEIGY INDUSTRIAL CHEMICALS
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Chicago Portland Houston Los Angeles Cincinnati New York

200 years Geigy

as the reader sees it . . .

Associations Cooperate

Editor:

Of course I agree with Mr. Jessop in his letter which appeared in the November issue of *Soap & Chemical Specialties*. All associations which might possibly be affected by the Hazardous Substances law should and must cooperate. And we do.

The policy on all these matters in the past among associations in the allied industries has been that the one most affected carry the ball and the others support him with everything they have. So far it has worked damned well, but quietly and without fanfare.

As for a committee, one does exist. It is an informal committee of trade association executives operated through the Drug, Chemical and Allied Trades Section of the New York Board of Trade. It meets when and if it seems desirable and can be called by a member of the committee working through Miss Helen Booth, the very efficient and capable secretary of the DCAT section.

Bernard Baruch had the right idea, I think, when he said "the best committee consists of two guys with one of them in the hospital."

S. L. Mayham,
Executive Vice-President,
Toilet Goods Association
New York

—★—

The Nose Knows

In the article entitled, "Legal Rulings on Soap," which appeared in the October issue of *Soap & Chemical Specialties*, there occur paragraphs concerning two damage suits which resulted from obnoxious odors.

In reading these accounts, it develops that the conditions to which the complainants objected were the result not of soap manufacturing, but of the rendering of fat and bones. Probably the author was misled by the titles of these companies, namely, in one case "Gulf Soap Corporation" and in the other, "Soap Corporation of America." It just so happens that there are numerous concerns which have the word "soap" as part of their official title and perhaps at one time did make some soap but are at present engaged in the rendering business.

The manufacture of soap is not accomplished without a certain amount of smell escaping into the neighborhood. Such an odor is not particularly obnoxious and is not to be compared in any way with the odor which comes from a tallow and grease rendering plant. It seems too bad that in an article such as you have presented, the soap industry should be tagged as among the industries of an undesirable nature for its surrounding neighborhood.

Harold G. Pile
Fels & Co.
Philadelphia.

●

Reader Pile is quite right. Although the paragraphs referred to in the article did cover rendering plants, as distinct from soap manufacturing operations, there are some soap companies who still do their own rendering, which is why this reference was left in the article. However, in general, it is only fair to the soap industry to say that today's plant is a far cry from the old days when it comes to unpleasant odors. Ed.

—★—

Remember Pine Oil?

Editor:

With reference to Robert F. Prindle's excellent article "Practical Aspects of Interaction of Surfactants and Disinfectants" in the November, 1958, issue of *Soap and Chemical Specialties* – as a past chairman of the scientific disinfectant committee of the old NAIDM, I especially appreciated his lucid and concise treatment of a very complex subject.

However, I was disappointed to find no reference at all to our well-beloved pine oil, still THE favorite disinfectant of the Great Southland. Straight from the tree (soaped up, of course), or beefed up with substituted phenols, it has, so far, successfully met the challenge of all odorless, perfumed, "minted," cresylic and coal tar types in this section.

Surely any man connected with "Lysol" should be mindful

(*Turn to Page* 248)

J. Malcolm Miller receives wrist watch as farewell present from Miss Ruth Goldberg on behalf of the employees of the Soap Assn. Mr. Miller left AASGP last month after 26 years with the organization to operate cattle ranch in Arkansas with his son. Roy W. Peet, Soap Assn. manager, in cap and gown, was "judge" in skit in which Mr. Miller was "tried". Farewell lunch was held in New York, Nov. 13.

From PROCTER & GAMBLE... a complete catalog of versatile formulation products for your every soap or detergent need!

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AMBER GRANULES. A neutral 88%, 42° titer-type soap of exceptional purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the preparation of hand cleaners, paste cleaners, polishes, lubricants and coatings.

ORVUS ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified alkyl sulphate. Offers exceptional efficiency and stability over a wide range of operating conditions. Wetting, penetrating, sudsing, dispersing and emulsifying properties make it excellent for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

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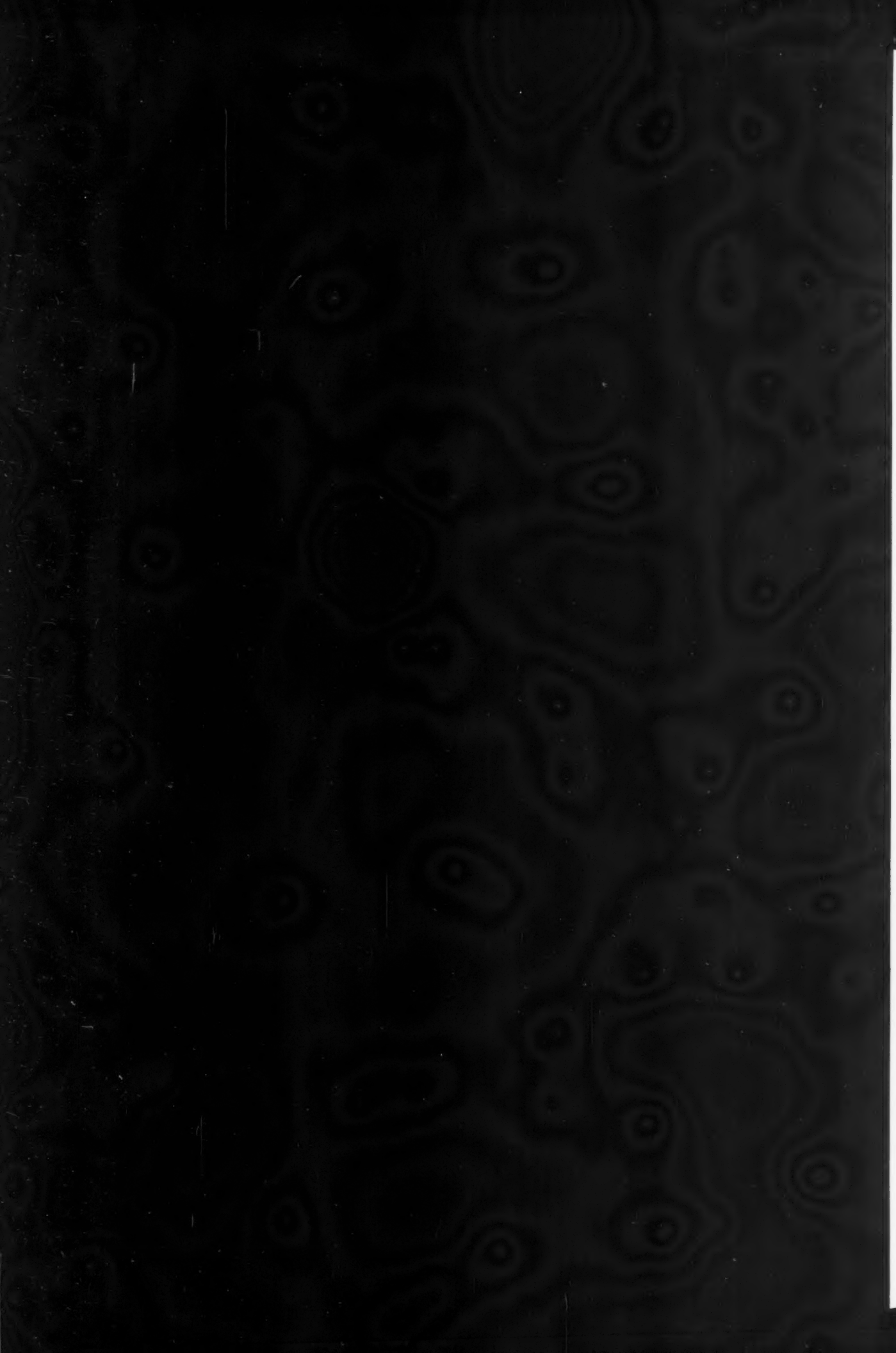
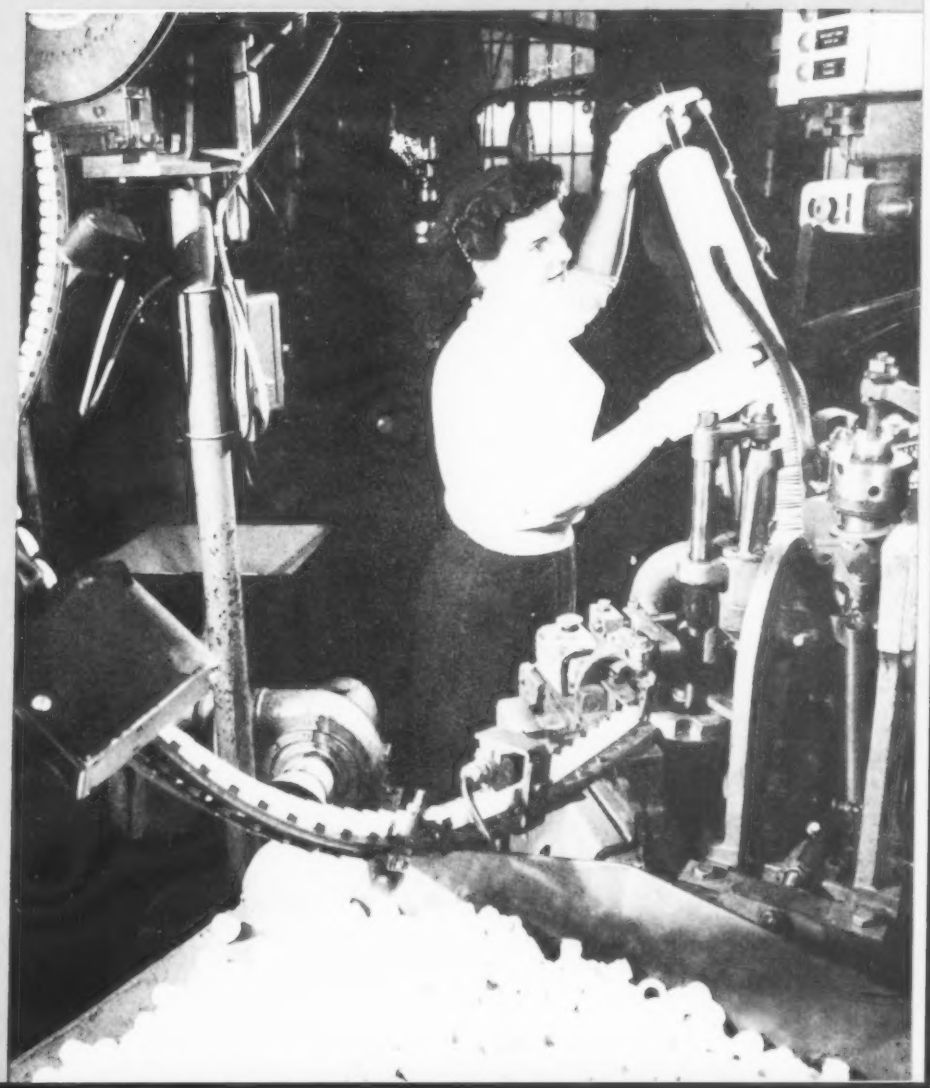


Detergents . . . Cleansers . . . Soaps . . .

Plastic non-drip nozzles (foreground) feed into machine (right) where they are attached to can tops (being loaded by operator) in one of final steps in manufacture of non-drip detergent cans by American Can Co. Nozzle-top assembly then is double seamed to can body, prior to testing and careful inspection before shipment.

- Aerosols
- Detergents
- Dishwashing compounds
- Floor scrubs
- Glycerine
- Hand cleaners
- Laundry soaps
- Liquid soaps
- Metal cleaners
- Potash soaps
- Scouring cleansers
- Shampoos
- Shave products
- Soap powders
- Starch
- Steam cleaners
- Medicinal soaps
- Textile detergents
- Toiletries
- Toilet soaps and other detergent and soap products



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Where are we headed in

Household Detergent Formulation?

By Willis J. Beach
Sugar Beet Products Co.
Saginaw, Mich.

FOR over 100 years there was little change in the soap industry. It became dynamic in the last ten years largely due to the impact of synthetic detergents. "Dreft," the first such product in the household field, got its start just 25 years ago.

Recently the technological race in this field has shown a tendency toward slowing a little. At least the development of new types and classes of syndets is levelling off, so that we can take stock, classify and correlate the information which has emerged. The industry's emphasis and energy appear to be shifting to the applications phase of the field, and many useful facts are now available relating to the properties of the various surface active agents and to their applications.

There are several excellent rather recent reviews on the syndets themselves, and on their applications. (1) (2) (3) These are cited for the reader who wishes background reading. Information on syndets may now be considered pretty well up-to-date with the recent publication of the excellent text, "Surface Active Agents," volume 2, by Schwartz, Perry and Berch. This text, along with the references cited above should serve as quite a complete background and guide for further work in nearly every aspect of the detergent industry.

This discussion confines itself to the mention of a number of the newer syndet types offering special qualities which invite the attention of those who formulate for the household market; and to the offering of a few formulas that illustrate the principles involved.

Household detergent products are often classified as "light duty" and "heavy duty" (the latter sometimes as "all-purpose") and exist in both powdered and liquid form. They find their biggest use in washing clothes, dishes, and the hair and skin. Products for rug and upholstery cleaning or washing painted walls and woodwork, and for washing the car may also come under the household application.

For the Home Laundry

Products for the home laundry fall into two well-known classes —the low foamers for the inclined basket machines, and the high foamers for the agitator types. All-purpose or heavy duty powdered detergents such as "Tide" first appeared about 1946. The first controlled suds detergent "All" was marketed in 1947. "Spin," said to be a sudsless type, was introduced last year.

The conventional high foam type is based on building sulfate and sulfonate syndets with complex phosphates as illustrated by the examples for a powdered product shown in table 1.

Table I

	A(4) Parts	B(5) Parts
alkyl aryl sulfonate	15	8
fatty alcohol ethylene oxide sulfate	5	8
sodium tallow alcohol sulfate	—	8
lauric monoisopropanol-amide	—	3
tetra sodium pyrophosphate	10	—
sodium tripolyphosphate	40	40
sodium silicate (meta)	5	5
sodium sulfate	15	35
sodium carboxy methyl cellulose	.5	1
perfume and color	q.s.	1
optical dye	.03	.03

The first three ingredients are the prime detergents. The phosphates act as secondary detergents and as dispersing and water softening agents. The silicate is the corrosion inhibitor. The use of sesquisilicates in the heavy duty products has been suggested. (6) The sulfate electrolyte aids detergency and acts also as a diluent. The carboxy methyl cellulose (CMC) aids in soil suspension. In one of the formulations, two or three per cent of lauric ethanol or isopropanolamide has been suggested in place of some of the pyrophosphate to improve foam stability.

The low foaming type is similar to the above except that nonionic syndets of the alkyl phenoxy or refined tall oil ethylene oxide adducts are used in place of the high foamers, and the alkalinity may be increased by use of 15 parts trisodium phosphate. The medium-to-low foaming ethoxylated tallow alcohols are now being offered at more attractive prices and this should lead to their greater use in the "controlled suds" heavy duty household products.

The newest products in the household laundry line are the built liquid detergents offered for use in the newer machines equipped with injectors. The injectors were first supplied as a means of introducing rinse aids and softeners. Their utility in connection with the liquid detergents was of course obvious, and liquid detergents suitable for reasonably heavy duty home laundry work such as

"Wisk" came on the market about two years ago. The heavy duty liquids generally make use of an alkyl aryl sulfonate base with a lauric high amide condensate for foam stabilization. The more soluble and alkaline potassium pyrophosphate is used and the syndets, rather insoluble in this high concentration of salts, are aided in solubility by the aryl sulfonate hydrotrope. In formula "A" below (7) where the syndet is simply a non-ionic phenoxy adduct, propylene glycol acts as a coupler:

	A Parts	B Parts
alkyl aryl sulfonate[1]	—	40
nonyl or octyl phenol ethylene oxide (9 to 12 moles)[2]	15-20	—
lauric diethanol amide (65% amide)[3]	—	4
propylene glycol	20-30	—
sodium xylene sulfonate[4]	—	5
tetra potassium pyro phosphate	18-20	20
sodium siliate (meta)	—	7.5
optical dye	—	0.1
water, perfume and color to make	100	100

Another formula, somewhat similar to "B" (7) has also been suggested as a starting point:

	Parts
alkyl aryl sulfonate	16
aliphatic ethylene oxide ether, 85% active (non-ionic)[5]	1
lauric diethanolamide (65% amide)	4
propylene glycol	1
sodium toluene sulfonate	7.5
tetra potassium pyro phosphate	18
sodium silicate (meta, 1:2.4 ratio)	5
carboxy methyl cellulose, medium vis. dense	0.5
optical brightener[6]	0.03
water	47
perfume and dye	q.s.

The CMC is first wetted out by dispersing it in the propylene glycol. This mix is slowly added to the water at about 120°F. under efficient agitation. The phosphate and toluene sulfonate are then added, followed by the alkyl aryl sulfonate—the amide and the non-ionic. The silicate is then added followed by the brightener, dye and perfume.

Detergent Bars

Because of the patent situation and manufacturing difficulties, it may seem that opportunity for the smaller soaper to gain even a small portion of the synthetic toilet bar market is not too open. The problems involved in syndet bar manufacture are well known to the larger soapers as are the specifications for an ideal synthetic or part synthetic bar. (8) The specs are worth repeating here:

(1) The bar should be equivalent to a good toilet bar in detergency, foaming, solubility and stability toward normal additives such as perfume.

(2) It should behave physically like a toilet bar with respect to wash down, lumpiness, sanding effect, cracking and wasting away on the soap basin.

(3) Its density should be reasonably close to soap, i.e., 1.0 to 1.15.

(4) It should have a precipitable curd with hard water that remains dispersed in reasonably hard water up to about 250 ppm.

(5) pH should lie between 7 and 8.

The so-called detergent bars now on the market actually contain a significant percentage of conventional soap combined with anionic or possibly some non-ionic syndet. Syndets used for this purpose are dodecyl benzene sulfonate, isopropyl naphthylene sulfonate, diamyl sulfosuccinate, and glycerol fatty acid ester sulfates, such as that used in "Vel" (9). The reaction product of polyoxyethylene alcohols with urea offers a solid syndet said to be useful as a base for detergent bars as well as for the powdered cleaners. Urea mixed with the 12 to 16 mole ethylene oxide adduct of tall oil also produces a solid granular composition for this purpose (10) which is supposed to make the bar less soluble in water and reduce water softening.

Representative of a stock formula for a syndet-soap bar is the following: (11)

	Per cent
alkyl benzene sulfonate (65 to 85% active)	41
sodium lauryl sulfate	15
tallow-coco soap (80%:20% ratio)	30
calcium stearate	6
titanium dioxide	1.5
"Polyox" WSR-35 or 205[7]	0.2
water, perfume	q.s.

"Polyox" is Union Carbide Chemicals Co.'s trade name for a new ethylene oxide polymer of high molecular weight. It adds lubricity to the bar during use.

Probably of most recent interest to the synthetic toilet bar field are those syndets derived by neutralizing alpha-sulfonated fatty acids with various organic bases (12). These offer likelihood of an all-detergent bar with considerable flexibility in solubility and plasticity. Another raw material, a primary fatty amine condensate with a lactone has been patented (13) recently. Lime soaps of such a product are claimed to be crystalline precipitates and tend to disperse better.

Products for Dishwasher

The household market for mechanical dishwashing detergents is still small. Only about five per cent of U. S. homes with electric wiring have dishwashers (14). There is little new in compounding mechanical dishwashing preparations. Alkaline salts and water at about 150°F. are in general use. Under conditions of a mechanical wash, higher pH values (up to 12) can be tolerated and are desirable. A typical conventional formula (4) is:

	Parts
sodium tripolyphosphate	30 — 40
sodium metasilicate	40 — 50
trisodium phosphate	10 — 15
sodium carbonate	10 — 15

The polyphosphate acts as water softener, wetting and dispersing agent, the silicate as a suspending and dispersing agent and inhibitor of metal corrosion. The

T.S.P. and carbonate add the necessary alkalinity. Small amounts of low foaming syndets such as the ethoxy adducts of tall oil or of the alkyl aryl ethers may be added to improve wetting and lower surface tension so that the rinse will sheet off with very little water break. Soil deposition on glassware is reduced by this move. Faster drying and better appearance particularly of glassware is the extra bonus in the newer machines equipped with an automatic rinse injector. In these, low foaming liquid syndets are introduced at concentrations of about 0.05 per cent to the final rinse.

Although liquids for automatic dishwashers are beginning to appear such as Lever's "Hum," most of the liquid formulations at present are for manual dishwashing. The increased use of liquid products, largely for dishwashing, is quite remarkable. Figures compiled by Food Publications, Inc., indicate retail sales jumped from $21,340,000 in 1953 to $119,860,000 in 1957. Prompted by the dripless metal and plastic squeeze cans, these liquid products have replaced the powders to a large extent. A formula illustrative of the liquid type is (4):

	Parts
alkyl aryl sulfonate slurry	20 — 25
alkyl aryl polyether alcohol	8 — 12
lauric diethanolamide	3 — 8
propylene glycol	2 — 3
perfume and coloring agent	q.s.

This formulation should be about 35 to 40 per cent active, the active ingredients being the first three. The sulfonate is the prime detergent. The other two detergents act as solubilizer and foam stabilizer respectively. The glycol acts as a coupler and viscosity regulator.

Departures from the conventional formulation above are now appearing which use some of the newer syndets such as the lower mole ratios (1:5) of ethylene oxide adducts of sulfated tridecyl alcohol from the Oxo process, and the sulfated polyoxyethylene alkyl phenols. An alkyl aryl polyether sulfonated alcohol of low mole ratio is also recommended as a high foamer. A formula (15) illustrative of the use of a single non-ionic is:

	Per cent
nonyl phenol ethylene oxide adduct, mole ratio $9{:}1_8$	60
isopropyl alcohol	19
water	20
perfume	1

Benztriazole is suggested for tarnish inhibition.

Shampoos for Home Use

Syndet type shampoos based on ammonium or ethanolamine salts of fatty alcohol sulfates are rather common now. The lower mole ratio (1:5) ethylene oxide adducts of sulfated higher aliphatic alcohols are liquids and are finding use in shampoos.

One formulation (16), based on an ammonium lauryl sulfate in combination with an amide, is said to yield a clear liquid shampoo with high-flash foam of fine texture and mildness to the skin:

	Per cent
ammonium lauryl sulfate_9	20
lauric diethanolamide $(62\%\ \text{amide})_{10}$	3 — 5
water	75 — 77

The amide is first melted, then added with mixing to the water solution of the sulfate. The amount of amide can be varied so as to adjust the viscosity of the finished product. Final pH should be adjusted to 7.0 or 7.5 with a little citric acid. Finally, perfume and/or dye are added, and 0.1 per cent formalin as a preservative. The pH of the finished product should be adjusted to 7.2 to avoid odor of ammonia.

The newer amphoteric syndets are invading the shampoo field because of their ability to reduce eye irritation in formulations containing syndets solubilized with sulfate and sulfonate groups. They also are compatible with soap. Shampoo formulations based on soap and syndet combinations are being offered. The alkylolamides are useful here. They help to improve foam, and, in addition provide better rinsing and reduce dulling of the hair by dispensing lime soap curds.

Nitrogen based syndets of complex cyclo-imido structure are suggested for syndet-soap shampoos

About the author . . .

A CHEMIST turned soap maker turned editor turned chemist is author Willis J. Beach, Cornell '34 and M.I.T. '36. Presently a chemist in the technical service department of Sugar Beet Products Co., Saginaw, Mich., hand soap makers, Bill has been with S.B. for the past seven years. For a year and a half he was with SOAP & CHEMICAL SPECIALTIES, eventually becoming editor.

Following receipt of an A. B. degree in chemistry, Bill went to M.I.T., and did graduate work in colloid chemistry. This was his first brush with synthetic detergents. In 1936 he joined Procter & Gamble in Cincinnati, where he spent two and one-half years. Bill joined Hershey Chocolate Co. in 1939 to help produce soaps from cocoa butter. He received his Naval commission in 1942, which was to lead to the interesting assignment of designing and procuring equipment for a coconut oil mill and soap plant on Guam.

(17). One such compound, with the imidazoline ring and a quaternary nitrogen capric fatty acid derivative of this series, is said to be compatible with soap and to either improve a soap shampoo without increasing costs or reduce cost while retaining original quality. A basic formulation would be: (18)

	Parts
syndet$_{11}$	20
potassium CNO soap	40
water	60

The cyclo-imid complex is an amphoteric syndet, reacting slightly more anionically in neutral or alkaline solutions, and has a close relationship to soap because of the carboxyl group on the molecule.

A specially modified dicarboxylic coconut adduct of this type has been found to have a particularly low skin and eye irritation index. In fact, the syndet is said not to sting the eyes. It must be carefully formulated to avoid destruction of its non-irritating properties, and the following formulation is suggested: (18)

	Per cent
syndet$_{12}$	30
hexylene glycol	2
polyoxyethylene sorbitan monolaurate$_{13}$	1
perfume	1.8
water	67

Antistatic Cleaners

A word should be said about the action of certain syndets that impart antistatic properties as they clean. The amines of the imidazoline type are higher molecular weight tertiary amines. When reacted with the weaker acids (acetic, citric, boric, etc.), they form water-soluble soaps of the invert type – positively charged. They are claimed to offer longer antistatic protection than the quaternary ammonium compounds. An antistatic detergent bar for plastic surfaces, fabrics, and upholstery has been suggested in the formulations shown at the top of the next column. (19)

	A Per cent	B Per cent
"Alrowax"$_{14}$	80	80
"Amine S"$_{15}$	17.5	17
citric acid	2.5	—
boric acid	—	3

An antistatic solution for use on plastics and upholstery fabrics is also given: (19)

	Parts
"Amine O"$_{16}$	6
acetic acid	1
water	1200

This product, of course, can be prepared in a more concentrated form.

All Purpose Liquids

Within the last year or so there has been a rash of new liquid general purpose household cleaners reaching the market. The idea of a general or all purpose product seems to the housewife to strike a balance of power and mildness. The heavy duty connotation of ingrained dirt and hard effort, and the light duty implication of inadequacy for hard tasks, each has left something to be desired.

Heralded by the much advertised "Lestoil," a number of similar products have appeared during the past year, among them P&G's "Mr. Clean," Lever's "Handy Andy" and products as Fels and Colgate, among others.

They are usually diluted ¼ cup to the gallon of water, or used in stronger concentrations up to full strength for a wide variety of cleaning jobs around the home from adding them to the family washing machine to washing the dog. Some such as "Lestoil" and "Mr. Clean" have the familiar odor of the old fashioned pine oil disinfectant. Others, not wishing to offend even a segment of the American housewife market, have turned to formulations probably just as effective but with subtler scent.

These products have their origin in the soluble pine oil soap formulations that contained about 60 to 70 per cent steam distilled pine oil, 10 to 20 per cent (anhydrous) rosin or tall oil soap and about 10 per cent water, and were among our early disinfectant cleaners. These early pine oil soaps were poor cleaners by today's standards but their cleansing ability was later often boosted by replacing five per cent of the soap with sulfonated turkey red oil.

In the past, solvents have had a questionable place in household soaps. According to Davidsohn (20) small amounts (five to 10 per cent) of solvent in a soap serves merely to enhance the solubilization effect of the soap itself upon fat and dirt and do not function particularly through solvent action.

The newer liquid general purpose cleaners go in for considerable amounts of immiscible oil, and a product that was broken down in the laboratory about a year ago showed approximately the following composition:

	Per cent
water (soft)	50
tall oil soap (anhyd.)	10
syndet (non-ionic)	3
immiscible oil	35

It is likely that optical brighteners and a few per cent of silicate or other alkaline salt might be added to boost alkalinity.

It may be surprising to some that these formulations of water, oil and soap result in single phase systems, but many of the non-ionic detergents strongly promote stable one-phase systems of solvents and soaps. Then too, pine oil, because of its free hydroxyl groups, is known to act as a co-solvent. Again, the use of tall oil soap is said to aid in the incorporation of solvents whereas the lauric and myristic acids tend to repress solvent miscibility.

That these liquid all-purpose cleaners do a pretty effective overall cleaning job is a fact that cannot be overlooked. Granting that the housewife may never need (and probably wouldn't accept) a solvent type cleaner in probably

(*Turn to Page* 241)

A Review of

Detergent - Germicide Interactions

By Denzel L. Dyer*
Dow Chemical Co.
Midland, Mich.

Growing importance of combined detergent/sanitizer formulations focuses attention on interaction between the surface active and the germicidal component of such products. Understanding of the mechanism of activation, synergism, and inactivation is a prerequisite for the correct formulation of an efficient detergent/sanitizer. Ed.

THE various interactions of detergents and germicides have long been a source of confusion. By a general coverage of three of these interactions—solubilization, inactivation, and activation—some of the confusion may be cleared away.

Solubilization has been known for over 100 years; a recent book of McBain and Hutchinson has reviewed the field thoroughly (1). Activation and inactivation of phenol by sodium oleate was reported by Frobisher in 1927 (2). Recent advances in the field of colloid chemistry and bacteriology have made it possible to give some explanation of this sort of phenomenon also.

In order to understand the effects of surfactants, one must consider their structure. The surfactant molecules are those in which one part is hydrophilic, while the rest is hydrophobic. In the well-known cases, at least, the hydrophobic portion is a hydrocarbon chain, while the hydrophilic group may be cationic, anionic, ampholytic, or non-ionic.

It is well-known that water molecules interact strongly with one another, but only weakly with hydrocarbons. For this reason, hydrocarbons in water tend to be "squeezed out" of solution into a separate phase. With surfactants this tendency is opposed by the hydrophilic group. The overall result is that the material has an appreciable solubility but is highly associated.

When the surfactant concentration is very low its ions or molecules occur singly. With increasing concentration there is a tendency for association. Across a fairly narrow range of concentrations association becomes quite extensive, forming aggregates of 30-300 ions, roughly. These aggregates are called micelles, and the concentration at which they start to form extensively is called the critical micelle concentration. The value of the critical micelle concentration depends on several factors, most prominent of which is length of the hydrocarbon chain (54). Each additional carbon in the chain diminishes this value by about one-half. The nature of the hydrophilic group, of course, has its effect. Added salts lower the critical micelle concentration,

Germicides are activated or synergized by surfactants at concentrations below and up to critical micelle concentration. Higher syndet concentration cuts germicidal action

*Paper presented at the meeting of Society for Industrial Microbiology, Bloomington, Ind., Aug. 28, 1958.

Figure 1

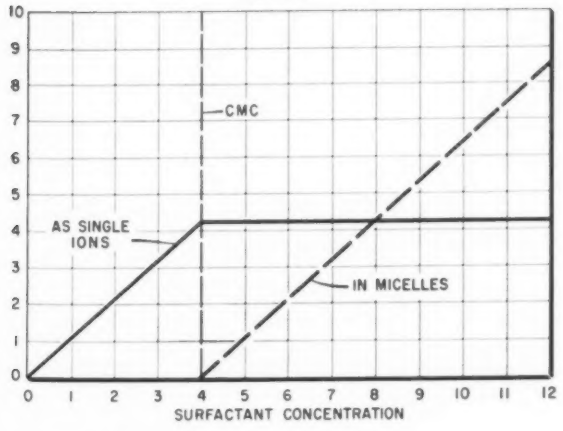
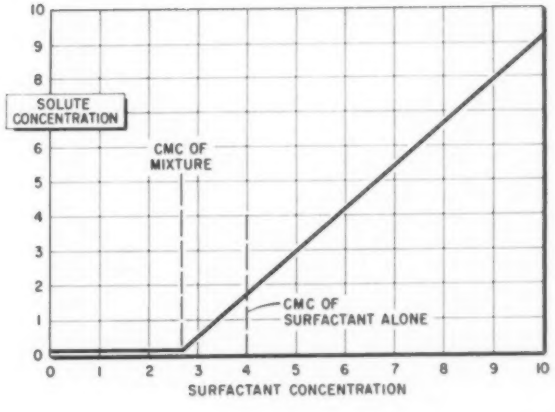


Figure 2



probably by neutralizing the repulsive charges between surfactant ions. With poorly soluble polar compounds mixed micelles are formed below the critical micelle concentration of the pure surfactant. (Fig. 1).

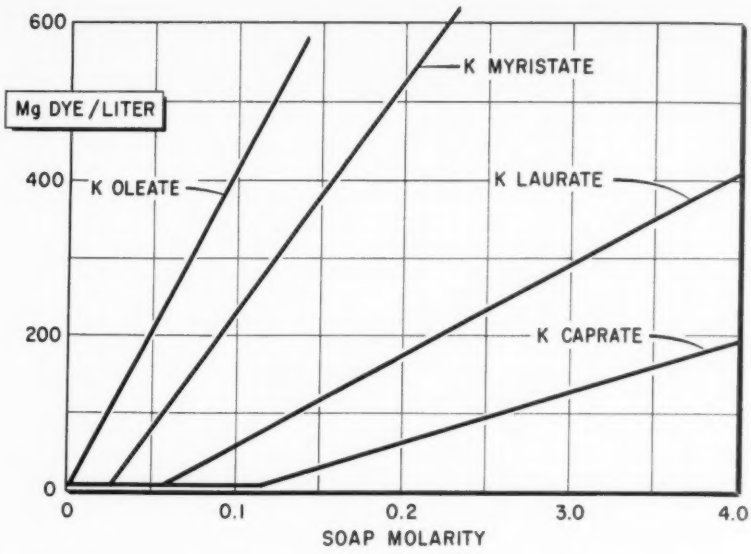
The micelle may conveniently be pictured as a very small droplet of hydrocarbon covered with a stabilizing hydrophilic layer. In many respects the micelle may be treated as a separate phase of the system (3). By this treatment we would expect that, as the surfactant concentration is increased, the concentration of single ions would increase up to critical micelle concentration. Above this level, single ion concentration should be constant, and further addition of surfactant should only increase the amount of micellar material present. We would also expect that added solutes would distribute themselves between the aqueous and micellar phases according to their oil-water distribution coefficient. For germicides this leads to solubilization and inhibition.

CMC and Solubilization

Surfactants will increase the total solubility of materials which are only slightly water-soluble, but which are soluble in organic solvents. This solubilization is a result of micelle formation, and the solubilizate can be considered to be dissolved in the interior of the micelle or on its surface. Little or no increase in solubility appears below the critical micelle concentration, although it must be pointed out that some small aggregates might exist below this level and that the solute may form mixed micelles below the critical micelle concentration of pure surfactant. (Fig. 2)

Above the critical micelle concentration, solubilization usually increases linearly with surfactant concentration. Essentially, the solubilization is directly proportional to the amount of micellar material present.

The chain length of the surfactant is quite important here for two reasons. First, the longer chains provide a larger volume of micellar material. Second, micelles form at lower concentrations for long-chain materials, so that a larger proportion of the surfactant is micellar. This is shown particularly clearly by Kolthoff and Stricks (4). (Fig. 3).



Source: Kolthoff, I.M., and Stricks; W., J. Phys. Coll. Chem. 52 915 (1948)

Figure 3

The nature of the solubilizate is also very important. For similar compounds, solubilization decreases with increasing molar volume of the solute, while increasing polarity generally increases solubilization. Here it is necessary to differentiate between relative and absolute solubilization. The data in Fig. 4 are taken from McBain and Richards (5). For these compounds, the solubility in detergent increases in the order: octane, hexane, methyl isobutyl ketone. The water solubility is also increased, however, and more rapidly, so that the relative effect is less.

It is possible, then, to give a general explanation of solubiliza-

Figure 4

	SOLUBILITY (G/100 ML)		AMOUNT SOLUBILIZED (G/100 ML)	RELATIVE SOLUBILIZATION
	IN WATER	IN 0.1 N DODECYLAMINE HYDROCHLORIDE		
n - OCTANE	0.002	0.337	0.335	168
n - HEXANE	0.014	0.659	0.645	47
METHYL ISOBUTYL KETONE	1.820	3.600	1.780	1.98

Source: McBain, and Richards; Ind. Eng. Chem. 38 642 (1946)

GERMICIDE	WATER SOLUBILITY		RELATIVE INHIBITION BY TWEEN 80
	%	M	
G - 11	0.0017	4×10^{-5}	>2048
G - 4	0.0017	6×10^{-5}	>5096
ACTAMER	0.0004-0.0008	2×10^{-5}	1024
SANTOPHEN 1	0.007	3×10^{-4}	> 128
DOWICIDE 4	0.03	1.5×10^{-3}	16
DOWICIDE 2	0.08	4×10^{-3}	16
HEXYL RESORCINOL	0.05	2.5×10^{-3}	4
PHENOL	8.2	0.9	2

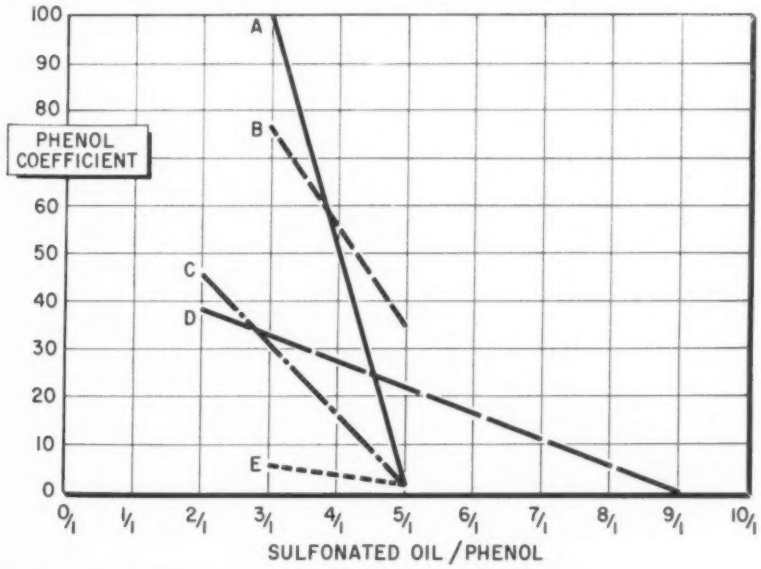
Source: Erlandson, and Lawrence; Science 118 274 (1953)

Figure 5

tion by treating the micelles as a separate phase in which the solubilized material is dissolved. In cases where there is only a limited amount of solute available, the same considerations should apply. Here the solute should be more or less extracted into the micelles depending on its partition coefficient. If the solute were a germicide, it would appear to be inactivated, since the concentration in the aqueous phase would have decreased. This explanation was advanced by Hueter and Engelbrecht in 1942 (59); by Alexander and Trim in 1944 and 1946 (35, 51) and again by Alexander and Tomlinson in 1949 (52).

The experimental results are in general agreement with this explanation (2; 6-33). There have been many reports of activation or inactivation or both, particularly with anionic surfactants and phenolic germicides. They can be generalized in a few statements. Germicides are activated (or synergized) by surfactants at low concentrations. This activation increases up to the CMC. With further increases in surfactant concentration, the germicidal activity decreases and may even become less than it was with no surfactant at all.

Figure 6. "A" is p-benzyl-2-chlorophenol, "B" o-benzyl-4-chlorophenol, "C" p-benzylphenol, "D" o-benzylphenol, and "E" p-benzyl-2-methylphenol.



Source: Carswell and Doubly, Ind. Eng. Chem. 28 1276 (1936)

Solubility and Inactivation

From this general treatment it would appear that inactivation would be strongest for materials of low water solubility and comparatively high "oil" solubility. Figure 5 is made up partly from a report by Erlandson and Lawrence (23). It shows that for a series of eight phenols, the less soluble ones are more inhibited by one per cent "Tween 80." Figure 6, originally published by Carswell and Doubly (20) shows that the phenol coefficient of formulations in sulfonated oil decreases as the proportion of sulfonated oil increases. The phenols of lower water solubility and higher phenol coefficient are more strongly affected.

After comparison of the activities of phenol, ortho-phenylphenol, and 4-benzyl phenol in potassium laurate solutions, Berry, Cook, and Wills (16) concluded that phenols which have increased solubility in water also show increased improvement of bactericidal activity in solutions of soap at all concentrations. From their graphs of mean single survivor time vs. soap concentration, however, it would seem that a different interpretation is possible. Figure 7 shows the results of their solubilization studies. The effect is relatively greater for the least soluble phenol. Figure 8 shows, for the same phenols, the mean single survivor times with potassium laurate concentrations below the critical micelle concentration, at this level and well above it.

For these 3 phenols, it appears that the less soluble ones are:

a. Relatively more solubi-

(*Turn to Page* 139)

FDA Explains Detergent Stand

In letter to *Soap & Chemical Specialties* FDA says "statement of interpretation" of Sept. 26 was not ruling changing law but reminder only "soaps" are exempt.

ANSWERS to nine questions pertaining to its ruling that toilet-bar detergents are cosmetics were released to *Soap & Chemical Specialties* Nov. 12 by the Food and Drug Administration. The questions were contained in a letter to FDA from this publication seeking to clarify the agency's interpretation as published in the *Federal Register* of Sept. 26. FDA in that interpretation defined soap, which is exempt from the Act, and stipulated that detergent substances other than soap used for cleansing the body are subject to the Federal Food, Drug, and Cosmetic Act which was passed in 1938.

According to the letter from John L. Harvey, Deputy Commissioner of the Food and Drug Administration, detergents for skin cleansing are subject to the provisions of the Act. This means that wrappers or labels of such products must show the net weight of the product. Also, if the product is colored, certified colors must be used. The label must also carry the name of the manufacturer of the cleanser. If it is a private label product, the name of the distributor must appear on the label, too.

Plants where such products are made are subject to inspection by FDA, and last but by no means least, as cosmetics, skin cleaning detergents will be subject to the 10 per cent federal excise tax.

Taxing of detergents would put them at a sharp disadvantage with comparable soap products. There have been cases in which this competitive disadvantage was taken into consideration by Internal Revenue Service and a tax exemption granted.

At a meeting with representatives of the Food and Drug Administration in Washington, D. C., early in December, a group from the Association of American Soap & Glycerine Producers requested a broadening of the chemical definition of soap promulgated by FDA in its Sept. 26 interpretation. The industry position is that the definition is too narrow an interpretation of the chemical facts involved. Spokesmen for firms marketing detergent based skin cleansers also feel the law, passed in 1938, has fallen behind technological advances in the soap and detergent industry.

FDA defines soap as a cleaner in which "The bulk of the nonvolatile matter in the product consists of an alkali salt of fatty acids and the detergent properties of the article are due to the alkali-fatty acid compounds; and (2) the product is labeled, sold and represented only as soap."

Such a definition should be broadened to include other products that perform the same functions as soap, says the soap industry.

Another complication that might arise in attempting to apply this definition involves the combination soap-detergent bars, particularly since "bulk of non-volatile materials" lacks something in specificity.

These are some of the points the Soap Association hopes to have clarified as a result of its discussions with Food and Drug Administration. Earlier, on Oct. 6 the legislative committee of AASGP met to discuss the ruling and initiate work on preparation of an industry brief.

The texts of our letter to the Food and Drug Administration and FDA's reply appear below. We have taken the liberty of grouping the questions and answers to make it easier for the reader to follow. The first paragraph of the letter from *Soap* and the paragraphs of Mr. Harvey's letter commenting on it appear in that order.

"In connection with the recent ruling of the Food and Drug Administration pertaining to detergent substances, a number of questions present themselves, which we would like to have answered to aid us in explaining to our readers what the effects of the ruling are. Many firms in the soap, detergent and chemical specialties field make products now covered by the Food, Drug and Cosmetic Act, which were not covered before. In fact, many of these have had no previous experience with the Act. Would you mail a copy of the Federal Food, Drug, and Cosmetic Act to me?"

* * * * *

FDA's reply: "We are enclosing a copy of the Food, Drug, and Cosmetic Act and calling your attention to the definition of cosmetics appearing in Section 201 (i). Let me emphasize that the statement of interpretation to which you refer is not a ruling, and is not new. The Act was passed in 1938 and provided an exemption from the definition of cosmetics for the

product "soap." The question you present is whether or not a detergent substance which is not soap shall be classified as soap under this Act for purposes of exclusion. We have the following comments to make on the numbered questions in your letter."

Question 1: "Were any hearings with soap industry representatives held prior to the issuance of the ruling?"

Answer: "Hearings were not had with the soap industry prior to the issuance of our statement of interpretation. Interpretations of the law are not arrived at by public hearing, but are simply questions of relating the facts to the law. Again, the simple question is whether or not the detergent bars in question are soap. We were aware of the views of some bath and toilet bar manufacturers."

Question 2: "Is the ruling immediately effective, or when will it go into effect?

Answer: The statement is, of course, immediately effective since, if our interpretation of the law is correct, it has been the law since its passage in 1938. We are without authority to change the terms of the law."

Question 3: "May the ruling be appealed, if so, is there a time limit on when it may be appealed? Have any protests or appeals been filed, by whom and on what grounds?"

Answer: "We know of no procedure by which an administrative interpretation of the meaning of the law can be appealed, although we are entirely willing to receive any facts from any affected party at any time. We cannot agree to set aside the provisions of the law while awaiting such comment. We have received views which do not coincide with ours. These are primarily on the grounds that a functional use of the product should be taken into account in classifying it; that is to say that since detergent bars are used like soap they should be regarded as being soap."

Question 4: "Does the Act require disclosure of formula, or must new product formulations be cleared with FDA before the products are marketed?"

Answer: The Act does not require disclosure of formulas for cosmetics, nor does it require prior clearance for cosmetics before they may be placed on the market. If such products are labeled in such manner as to cause them to be classed as drugs, they may require clearance as new drugs."

Question 5: "Why was the ruling issued at this time; why did FDA feel the ruling was necessary at all; does FDA have any adverse information or data on products now covered by the Act! if so, what is the nature of the data; is it based on laboratory tests, use tests, or consumer complaints?"

Answer: "The statement of interpretation was issued in September because it was apparent that some manufacturers were not familiar with these provisions of the law. We have received complaints from the public and from physicians concerning adverse effects attributed to the use of some of these products."

Question 6: "In addition to bar form detergents, what other specific types of products are covered by the new ruling?"

Answer: "Any article intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, pro-

(*Turn to Page* 213)

S.P.I. 3-B—§ 3.652 **Reprinted from Federal Register of September 26, 1958**

§ 3.652 ***Labeling of detergent substances, other than soap, intended for use in cleansing the body.*** (a) In its definition of the term "cosmetic," the Federal Food, Drug, and Cosmetic Act specifically excludes soap. The term soap is nowhere defined in the act. In administering the act, the Food and Drug Administration interprets the term "soap" to apply only to articles that meet the following conditions:

(1) The bulk of the nonvolatile matter in the product consists of an alkali salt of fatty acids and the detergent properties of the article are due to the alkali-fatty acid compounds; and

(2) The product is labeled, sold, and represented only as soap.

(b) Products intended for cleansing the human body and which are not "soap" as set out in paragraph (a) of this section are "cosmetics," and accordingly they are subject to the requirements of the act and the regulations thereunder. For example, such a product in bar form is subject to the requirement, among others, that it shall bear a label containing an accurate statement of the weight of the bar in avoirdupois pounds and ounces, this statement to be prominently and conspicuously displayed so as to be likely to be read under the customary conditions of purchase and use.

(Secs. 201 (i), 602 (b) (2), 52 Stat. 1041, 1054; 21 U.S.C. 321 (i), 362 (b) (2).

Reprinted by
U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE.
Food and Drug Administration
September, 1958

New Format for Soap Industry Meeting

A NEW approach to a review of new developments in soaps and synthetic detergents and their applications will highlight the 32nd annual convention of the Association of American Soap & Glycerine Producers, Inc., New York. The meeting will be held Tuesday, Wednesday and Thursday, Jan. 20-22, at the Waldorf-Astoria Hotel, New York. Theme of the meeting is: "Soaps in Stereo—'59, A 2-way view of all that's new!"

Format of this year's program, as well as content, represents a marked departure from those of previous years, according to Roy W. Peet, manager of the Soap Association.

Two panel sessions will review and predict changes taking place or about to take place both in soap and detergent formulations and in areas in which these products are used. Leading off the symposium on background for product improvement ("changes from the inside") will be a general discussion of "Fatty Acids and Derivatives in Special Purpose Soaps and Detergents." This subject will be explored during a joint meeting of the Fatty Acid Division and the Industrial Soap Division on Tuesday afternoon, Jan. 20, following a joint luncheon of both groups.

The general content of this panel will be a description of the starting materials used for various fat-based detergents and a discussion of the characteristics of significance to the detergent formulator. Topics to be discussed and speakers include:

"Fatty Acid Soaps," by W. M. Linfield, Armour & Co., Chicago;

"Fatty Alcohol Sulfates," Carl Pacifico, American Alcolac Corp., Baltimore;

"Other Special Purpose Anionics," by F. W. Woodward, General Aniline & Film Corp., Easton, Pa.

"Nonionics," by H. W. Zussman, Geigy Chemical Corp., Ardsley, N. Y.;

"Amphoterics," by James Freeman, General Mills, Inc., Minneapolis.

It is planned to allot each speaker 20 minutes, with time for questions.

Part II of the stereo theme on Wed., morning, Jan. 21, will consider "Changes from the Outside" which will call for new products, modified ones or more of current formulations. The panel will seek to apprise the meeting of changes originating with the textile and apparel business, those in the appliance field, new materials of building construction which require cleaning or other maintenance, new health services, and other advances using cleanliness products in new ways.

Participating in this external approach will be: Hector Borghetty of General Aniline & Film Corp., New York, on textiles; Edward B. Winterstein of *Starchroom Laundry Journal* magazine, published by the trade paper division of Reuben H. Donnelley Corp., New York, on changes in commercial laundries and launderettes; a representative of a washing machine manufacturing firm to report on new developments in that field; a representative of the U. S. Public Health Service on changes in sanitation practices in public health, and a discussion of new building materials by a speaker from an architectural or building magazine.

General Lucius Clay, U. S. A. retired, chairman of Continental Can Co., New York, will address the Wednesday luncheon. Later that afternoon the Maid of Cotton fashion show will be held.

As a logical extension of the previous two days of discussion, a panel slated for Thursday morning, Jan. 22, will attempt to provide answers to the question: "What Are We Going to Do About It?" Moderator for this session will be Dr. R. B. Wearn, director of research, Household Products, Colgate-Palmolive Co., Jersey City, N. J.

Panel participants include G. E. Hinds, Continental Oil Co., Houston, Tex., on "New Fatty Alcohols for Detergent Alkyl Sulfates." A. J. Gard of Dow Chemical Co., Midland, Mich., will report on improving soap with chelating agents and other additives. Standards for evaluating improvements in detergents will be suggested by R. Dale Stayner of Oronite Chemical Co., San Francisco. The anchor man of the symposium, Dr. Robert E. Ferris, Purex Corp., South Gate, Calif., will speak on "Brighteners and Bleaches."

Also scheduled for Thursday morning, Jan. 22, is a discussion workshop to be conducted under the title, "How Packaging Developments Are Contributing to Product Developments." Frank W. Schreiber of Lever Brothers Co., Edgewater, N. J., will be moderator. Discussions of the use of foil and plastics in soap and detergent packaging, as well as a report on multipacks will highlight this panel.

A guest speaker, whose name has not been announced as yet, will speak at the group luncheon on Thursday, Jan. 22. At the annual business meeting, immediately following lunch, officers and directors for the coming year will be nominated. Their election will take place during the ensuing meeting of the board of directors.

The final session of the meeting, that of the Glycerine Division, will be devoted to a review of the subject of glycerine in alkyd resins. The association is attempting to arrange to have representatives of firms that manufacture paints and paint vehicles present for this session, to which they will be admitted free. Speakers and their topics will be announced soon.

The concluding feature of the meeting is the suppliers' cocktail party and the annual banquet and floor show in the grand ballroom.

Detergent Adsorption on Soil and Substrate

By Jay C. Harris, Monsanto Chemical Co., Dayton, O.

Part II

ADSORBED molecules vary in areas covered per molecule, but some compounds of differing makeup have nearly identical area values. Estimates of the areas occupied by various molecules appear to depend to some extent on the method used, technique of operation being very important. The following variations for several molecules have been reported (34).

	Emmett and Brunauer	Harkins and Jura
Nitrogen	16.2	16.2
n-Pentane	36.2	52.4
Pentene-1	34.9	49.3
n-Heptane	42.5	64.0

The excellent agreement for nitrogen, normally used for many surface area measurements is important.

Differences in the values dependent upon the techniques of measurement and the substrate used are illustrated (43): At the air/solution interface "Igepal CO-710"* (a nonylphenol 10.5 mol ethenoxy adduct) had an area of 63 A^2. At a sand/solution interface spectrophotometric measurement indicated the area per molecule as 39-101, A^2, by surface tension measurement 26-42 A^2, and by radioisotopic measurement 53-77 A^2. Another illustration of variation which can occur through the use of a single adsorption compound for measurement of surface area is illustrated by the values for methylene blue surface coverage. Paneth and Radu (76) measured the area of diamond powder (cubic crystal) covered by methylene blue and found that one milligram of dye covered 1 m^2 of surface. Calculations from this value gave an area per molecule of 62.5 A^2. Another investigator (45), by scale model and other measurements indicated that the dye occupied an area per molecule of 130 A_2, a factor of a little over twice that of the other investigators. Perhaps measurement of identical surfaces by the dye and by radiotracer technique might resolve this discrepancy, but no explanation for the variation has been advanced.

Fatty Acids and Soaps: Areas of 20.5 A^2 have been found (2) for fatty acids, dibasic esters, and alkyl amines (on alkaline solutions), alkylamides, methyl ketones, saturated triglycerides (area/chain), alkyl ureas, and acetamides. Areas covered by other compounds are: Esters of saturated acids, 22 A^2; α-monoglycerides, 26.3 A^2. A more recent measurement of the surface areas of 1- and 2-monoglycerides in the liquid condensed state had limiting areas of 25.0 to 25.5 A^2 at 23.0°C for the former, and 28.5 to 29.5 A^2 for the latter compounds (66).

Table 1 gives the areas covered per molecule, film thickness, and molecular length per carbon atom for a series of fatty acids and glycerides. The values which have been given were for compressed films. For the limiting area, which is that at which the pressure begins to rise rapidly above that of the two dimensional vapor from the film varies slightly from the values for compressed films (34).

Solid films formed by myristic acid on metal surfaces can result from a series of interactions: (a) undissociated fatty acid-basic metal ion, (b) dissociated fatty

Table 1. Estimated Cross-Section Dimension and Length of Molecules (56, 39Å)

Compound	No. C atoms	Area occupied /Mol (A^2)	Film thickness (A)	Molecular length/C atom (A)
Palmitic acid	16	21	24.0	1.50
Stearic acid	18	22	25.0	1.39
Cerotic acid	26	25	31.0	1.20
Tristearin	57	66	25.0	1.32
Oleic acid	18	46	11.2	0.62
Triolein	57	126	13.0	0.69
Trielaidin	57	120	13.6	0.72
Cetyl palmitate	32	23	41.0	1.37

*Registered trade name Antara Chemicals, a sales division of General Aniline & Film Corp., New York, N. Y.

acid-basic metal ion, and (c) dissociated fatty acid-simple metal ion. The second interaction is said to be responsible for solid monolayers at areas per fatty acid molecule as high as 50 A^2, while the last interaction results in soluble monolayers (113). Measurements of the molecule of sodium palmitate gave a length of 23 A, the other dimensions being 6.2 and 3.7 A, for a cross sectional area of 20.8 A^2/molecule. The dimensions for sodium oleate were given as 12.3 x 7.56 x 6.66 A, the double bond causing the shortening in length of the molecule (23, 105); the cross sectional area was 50.2 A^2 per molecule. Reference to Table 3 will demonstrate that for oleate and stearate soaps the area covered is more a function of the polar grouping and in particular the cation, than of the nonpolar chains (96).

Other Surfactants: The effect of substituent alkyl groups on surface coverage for a series of dialkyl esters of sodium sulfosuccinic acid is shown in Table 2. It should be noted here that the zinc salt of the di-2-ethylhexyl ester has essentially the same effect on surface coverage as the sodium salt, and that more nearly equal lengths of the branched chain cover larger areas than straight chain substituents.

Sodium alkylbenzene sulfonates were more easily compressed as the molecular weight increased. Configuration of side chain affected the area covered per molecule, increasing in the order 1-dodecyl < 2-dodecyl < 2-methyl-2-undecyl < polypropylene < 6-dodecyl (63).

One estimate (80) of the area of a molecule of sodium dodecyl sulfate as a close-packed film was 37 A^2, or 31 A^2 as a close-packed film on dilute solutions of ammonium sulfate, and under different conditions (104) 70 A^2 if present in a close-packed horizontal layer, or 28 A^2 if in a close-packed vertical condition. Tritiated sodium dodecyl sulfate in water and in a buffered solution containing constant excess of a neutral salt and a monolayer at the surface was found to have an area per molecule of 33 A^2 (75).

That pH affects adsorption on inorganic surfaces was shown in some flotation experiments. Sodium hexadecyl sulfate was adsorbed below pH 5 with a maximum at pH 2.6; above pH 5 sodium ion was adsorbed and not the hexadecyl sulfate ion (24).

Alkylphenol ethylene oxide adduct molecules are close-packed at the surface, with the alkylphenol portion projecting outward (44). The large area (100 A^2/molecule) of alkylphenyl polyglycol ether indicated that this molecule is flat on the water surface (63). "Triton X-100*. (isooctylphenyl polyoxyalkylene adduct) was said to have a length of 45.5 A, three-fourths comprising the hydrophilic oxyethylene chain fully extended in aqueous solution (54).

For appreciation of comparative dimensions of surfactants, soils, and substrates, comparison can be made with some relatively common materials. Water is an excellent example, since it is so universally present either adsorbed on surfaces, or as a solvent. The cube root volume occupied by a molecule of water in the liquid state at 20°C is 3.1 A, and this thickness is then monomolecular (34). For comparison with the surfactants, a substrate such as cellulose has the following dimensions (39C): The unit cell was 7.9 x 8.35 x 10.3 A; the minimum size of the cellulose molecule was 200 A. The cellulose molecule in cotton fiber probably is 1000 A in length, though the maximum was said to approach 17,000 A. The molecular dimensions of dyes are suggested by the fact that such molecules, 30 x 8 x 3 A, have access to the system of openings in cotton to the extremely large internal surface of the fiber (59). As another means for size comparison, film thicknesses of motor oil on water have been measured, the colors produced being an indication of thickness (39B):

Film Thickness x 10,000 for A	Color of Film
1.27	Yellow
2.42	Blue
6.03	Red

Table 3 is a compilation of the surface areas per molecule of a wide variety of surfactants and possible soils.

Some tentative conclusions drawn from this table follow. As indicated previously, the double bond in oleic acid causes greater surface coverage per molecule than saturated stearic acid. This effect also is found with triolein versus tristearin. Saturated fatty acids all have about the same surface areas, as do their soaps. However, for soaps cation valency controls surface coverage. Apparent differences in sodium dodecyl sulfate values undoubtedly lie in the conditions observed during measurement and 30 to 40 A^2 seems a reasonable mean. The alkyl sulfate homologous series, as with soaps, might be concluded as in general having the same area coverage without regard to carbon chain length. From the

*Registered trade name Rohm & Haas Co., Philadelphia.

Table 2. Areas of Molecules of Sulfosuccinic Acid Esters (17)

Na Salts	Approximate Units: Area A^2	Length A	Vol. A^3	Mol. Wt.
Di-(n-heptyl)	69	9	625	416
Di-(n-octyl)	49	14	686	444
Di-(2-ethylhexyl)	60	11	660	444
Di-(1-methylheptyl)	51	13	664	444
Mono-2-ethylhexyl, mono-1-methylheptyl	68	10	680	444
Di-(1-butylamyl)	87	8	713	472
Zinc salt-di-(2-ethylhexyl)	57	24	1368	907

Table 3. Surface Areas Per Molecule

Compound	Mole Ratio Ethylene Oxide	cmc Micromolar	Area/Molecule A^2	Reference
Fatty Acids				
Stearic acid	—	—	20	36
" "	—	—	22	56, 39A
Oleic acid	—	—	46	56, 39A
α-Amino palmitic acid	—	—	28	5
Fatty Compounds				
n-Octadecylamine	—	—	31	11
Fatty alcohols			20.7-21.6	34, 2
Cetyl alcohol	—	—	20.3	34
Monoglycerides,	—	—	26.3	3
Glycol dilaurate	—	—	83	2
Tristearin	—	—	66	56, 39A
Triolein	—	—	126	56, 39A
Nitriles	—	—	27.7	2
Soaps	—	—		
Na Myristate	—	—	28	111
Na Palmitate	—	—	20.8	105
Na Stearate	—	—	26	36
" "	—	—	21	111
" "	—	—	42	87
Na Oleate			47	111
Magnesium oleate			50-51	96
Magnesium stearate			50-51	96
Calcium oleate			70	96
Calcium stearate			70	96
Aluminum oleate			120-140	96
Aluminum stearate			120-140	96
Alkyl Sulfates				
Na Decyl sulfate	—	—	50-52	55
Na Lauryl sulfate	—	—	40	112
Na Dodecyl sulfate	—	—	28	104
" " "	—	—	37	80
" " "	—	—	49-52	55
Na Tetradecyl sulfate	—	—	50-51	55
Na Cetyl sulfate	—	—	35	5
" " "	—	—	20	34
Sodium hexadecyl sulfate	—	—	23	24
Nonionics				
Igepal CO-710 (nonylphenol 10.5 mol EO adduct)	10.5	—	63	43
Alkylphenylpolyglycol ether	—	—	100	63
Octylphenol	8.5	180-230	53	44
Nonylphenol	9.5	78-92	55	44
"	10.5	75-90	60	44
"	15	110-130	72	44
"	20	135-175	82	44
"	30	250-300	101	44
"	100	1000	173	44
Miscellaneous Surfactants				
Na Alkylbenzene sulfonate	—	—	20	63
Dihexyl Na sulfosuccinate	—	—	84-89	55
Tetrasodium-N-(1,2-dicarboxyethyl)-N-octadecyl sulfosuccinate	—	—	41	6
n-Octylpyridinium bromide	—	—	34	16
Fluoro Compounds				
C_{11} Fluoroalcohol	—	—	29	37
Perfluorooctanoic acid	—	—	24	94
C_{13} Fluorocarboxy acid	—	—	19	37
Hydrocarbons				
Benzene (6 A thickness)	—	—	25	3
Naphthalene	—	—	21.5	2
Anthracene	—	—	21.5	2

(Table continued on following page)

Table 3 (*continued*) Surface Areas per Molecule

Compound	Mole Ratio Ethylene Oxide	cmc Micromolar	Area/Molecule A^2	Reference
Miscellaneous				
n-Octylglucoside	—	—	40	16
Cholesterol	—	—	40.8	2
Cellulose derivatives (per hexose unit)	—	—	60	2
Lecithin	—	—	73-75	5
Phenols and simple p-substituted benzene compounds			24	2
Methyl ketones			20.5	2
Alkyl ureas			20.5	2
Acetamides			20.5	2

one value for alkylbenzene sulfonate it might be surmised that its area approximates that of benzene. Nonionics exhibit the greatest surface coverage of any of the listed surfactants. This may be correlated with their exceptionally low cmc values and relatively small percentage amounts adsorbed on surfaces.

Adsorption on Soil

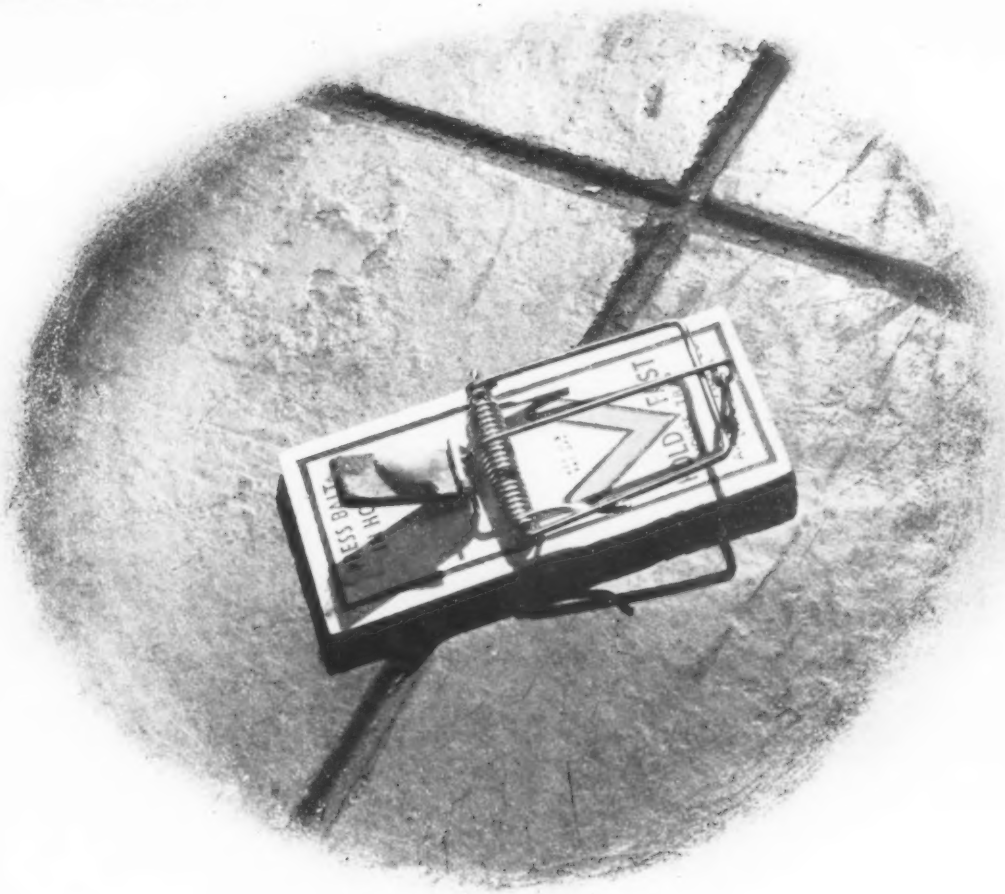
Basic to a good understanding of the adsorption phenomenon is appreciation of the characteristics of the surfaces on which absorption takes place. Langmuir's concept (57) of a crystal surface in which the atoms are in checkerboard arrangement forming a regular lattice plane structure is probably illustrative of most surfaces. He proposed that crystal surfaces had a definite number of "elementary spaces," each capable of holding one adsorbed molecule or atom, with frequent cases where two or three different kinds of spaces existed. A stepwise adsorption often encountered was attributed to the stronger force causing the initial adsorption, subsequent adsorption being slower for the lesser forces present. It was visualized that the molecular size of the adsorbate would be so large that it could not occupy adjacent elementary spaces, these then remaining unsatisfied. Crowding of large molecules could result when their size was larger than the elementary space: This was called steric hindrance. The exact fraction of the elementary places covered was said to be dependent upon the shape and plastic properties of the molecules and their mobility on the surface. Glass was specifically noted as being amorphous and probably not arranged in a regular lattice structure which meant that an indefinite number of elementary spaces were present.

Illustrative of Langmuir's concepts are several researches with platinum and other metals and glass. Platinum surfaces (8, 65) adsorbed n-octadecylamine from a n-hexadecane solution in certain areas, but not carboxy acids, and acids but not amines in others. It was suggested (7) that these differences in the ability of the H of the acid or N atom of the amine to adsorb are the result of coordination with the electrons in the metal surface. Surfactants from polar solution are adsorbed by platinum (50). The explanation is that the great mobility of the electron cloud allows the polar group of the organic molecule to attract or repel these electrons, and to set up image charges in the metal which hold the film to the surface. Cerotic acid films on platinum were said to have an activation energy for evaporation of about 20 Kcal, but the energy adsorption was established at 6 Kcal. This was considered substantiation of evaporation at the perimeter of patch edges since the activation energy was only a fraction of the binding energy for a molecule within the film and only a fraction of the bonds were broken on evaporation (51). On powdered steel surfaces (33) portions of the surface gave irreversible adsorption of alkylcarboxy acids, amines, alcohols and esters. As with platinum, certain areas would irreversibly adsorb either acid or amine while others exhibited adsorption in the reverse manner. In this instance with powder of a surface area of $0.10 m^2/g$, and with an adsorbate of 21 A^2 cross sectional area, only 70 per ceent of the surface was covered by a tight-packed monolayer. Examination of radiotagged stearic acid monolayers on aluminum by autoradiography established the presence of islands of liquid expanded phase surrounded by areas of gaseous phase (87). Contrasted with platinum or steel were chrome plated steel slides which failed to show the preferential space or patch adsorption for the alkylamine or alkylcarboxylic acid (8).

Adsorbed films on glass were obtained with cationic, but not anionic or nonionic surfactants (50) and this was explained on the basis that the glass surface offers mainly negatively charged oxygen atoms, the positively charged silicon atoms being located in small spaces between them, so that only the positively charged cationics formed films. That monomolecular films of cerotic acid exhibited no change in structure during evaporation was taken as indication that these films existed as patches on

(*Turn to Page* 233)

EWING GALLOWAY PHOTO



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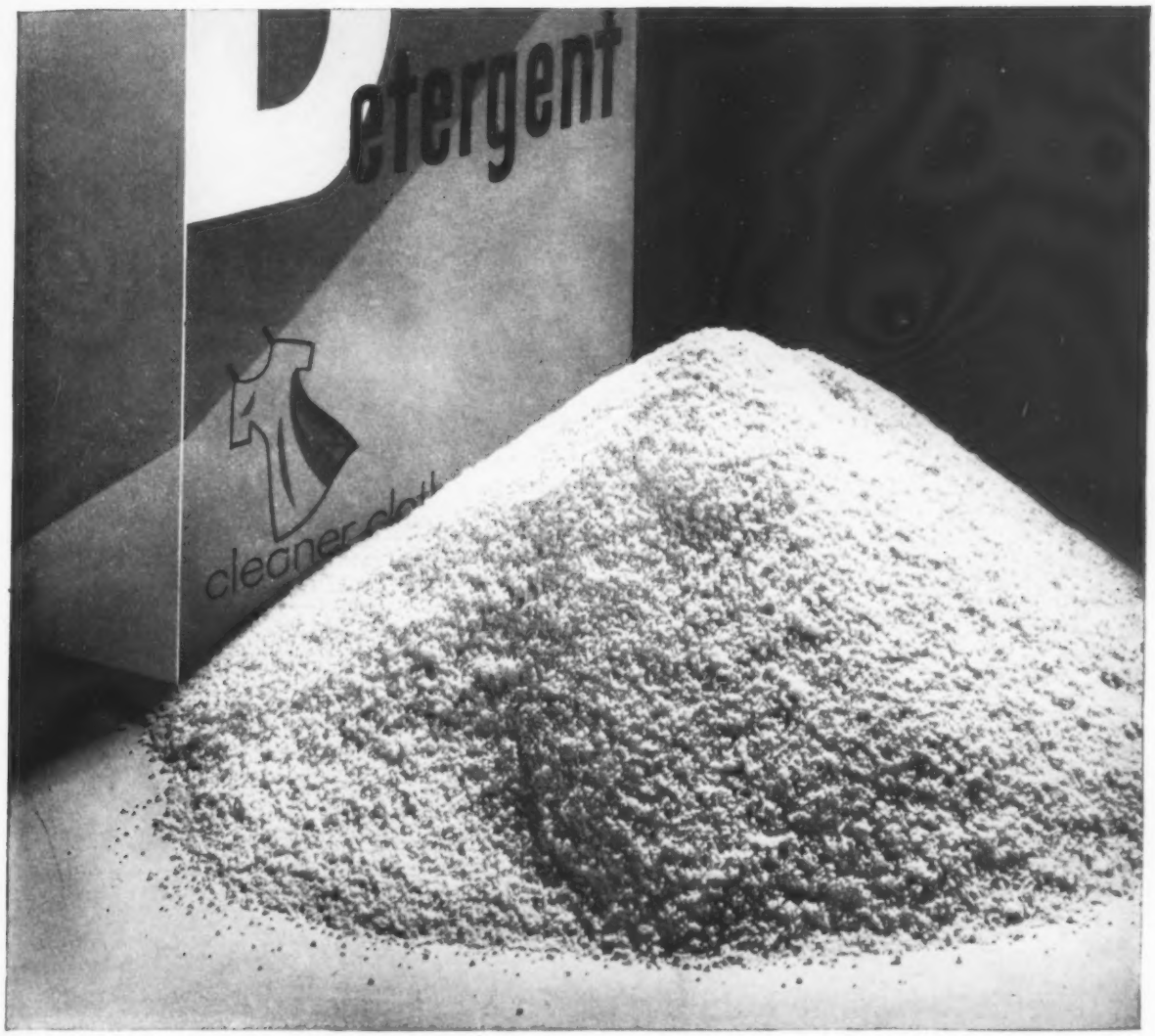

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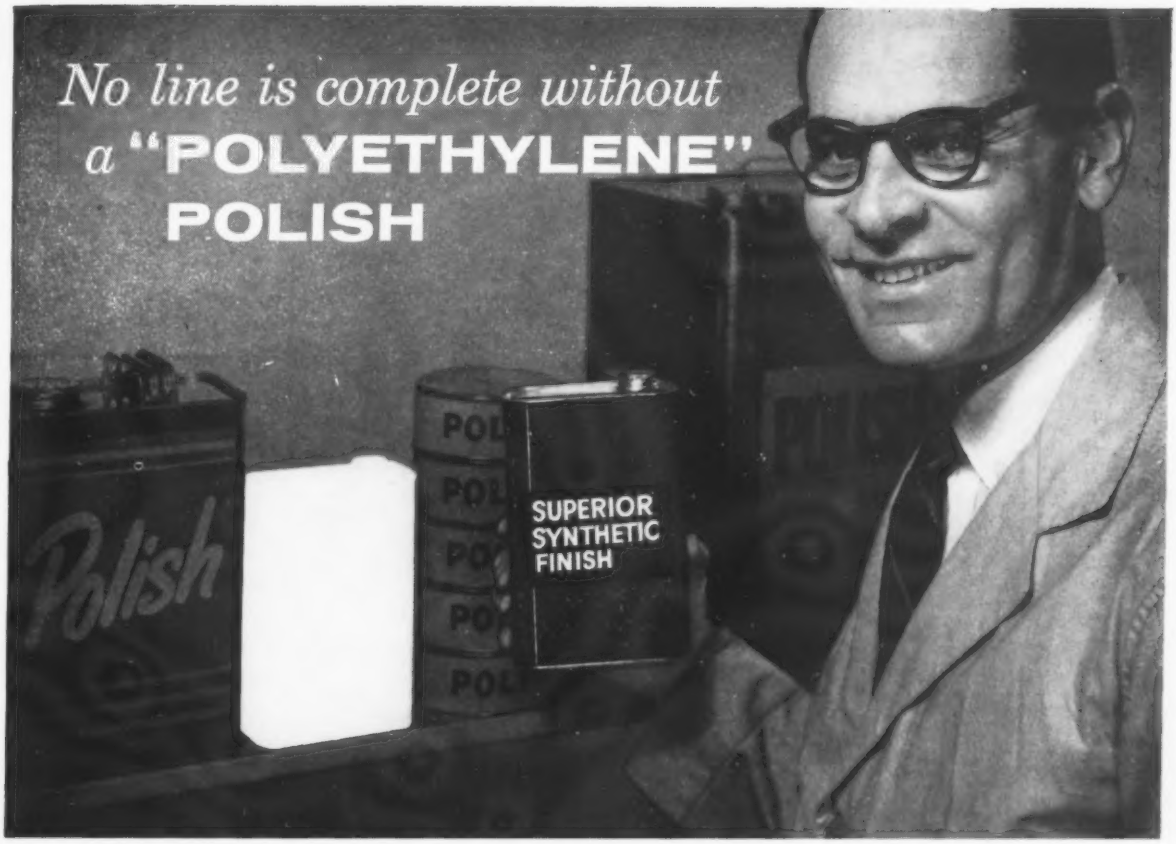

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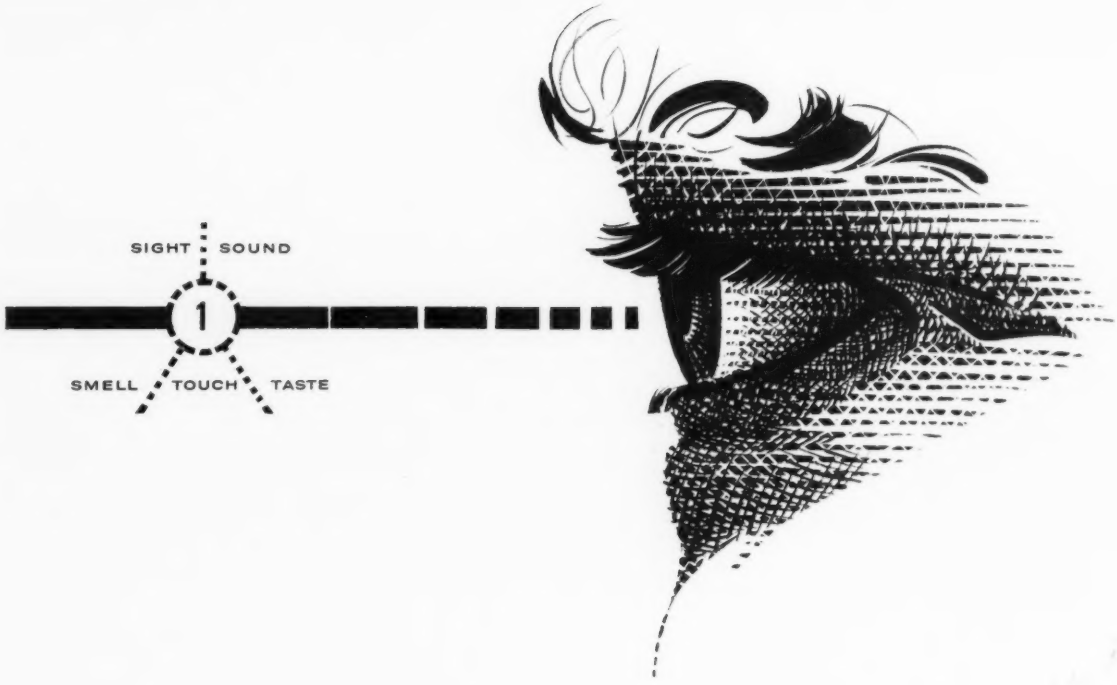

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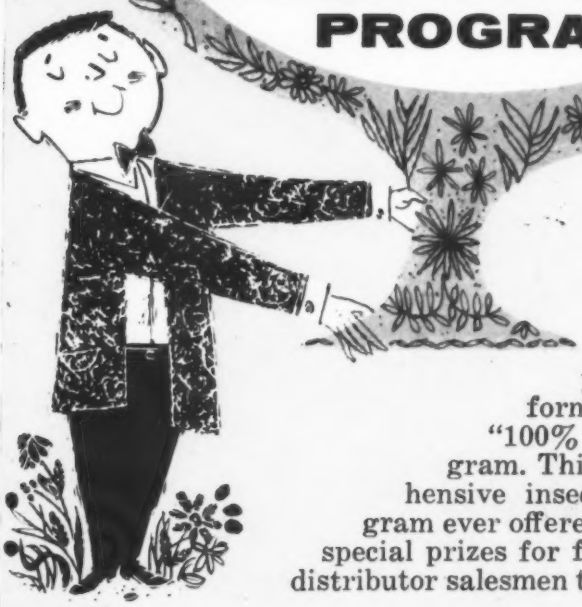

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1715 S. E. Fifth Street / Minneapolis, Minnesota

C.S.M.A. Meeting in New York

Aerosol "Super Market," symposium on precautionary labeling, addresses of three presidents, aerosol packaging awards, division sessions highlights

MAKERS of chemical specialties from far and near are flocking into New York City for what could be the largest meeting in the history of the 44-year-old Chemical Specialties Manufacturers Association. The two or three day 45th annual C.S.M.A. meeting,—a two-day affair if you don't count the day of committee meetings, Dec. 8, three if you do,—is solidly packing the Hotel Commodore and neighboring hostelries.

Besides a record breaking attendance, probably over 1000, this year's gathering in Gotham, the first in three years for C.S.M.A., the diversity of the program and other features of the convention are setting new high water marks. For instance, to mark the 10th anniversary of the establishment of the Aerosol Division of C.S.M.A., a fully stocked super market displaying thousands of pressure packages of all types, shapes and materials of construction has been set up in the hotel's west ballroom for all convention delegates to visit and gape at. Last evening, the "grand opening" of the super market was staged with a cocktail party and briefing on aerosols for representatives of newspapers, consumer and trade magazines, radio, television—the works. Credit for the idea goes to Joseph Tomlinson of General Chemical, who also did the leg work on the project.

Aerosols also were in the spotlight during the luncheon, Dec. 9, when Fred Lodes, Lodes Aerosol Consultants, Inc., New York, and chairman of the C.S.M.A. aerosol publicity committee handed out 11 plaques for aerosol products winning top awards in 10 classifications and a "best of show" in the 1958 Aerosol Packaging Contest. Photographs of winning packages appear on pages 145 and 174-175 of this issue.

Or, for those whose interests may not be confined exclusively to aerosols, possibly they came to learn about precautionary labeling. If so, a star studded panel of experts, or those who should be expert on the subject, was to be on hand to discuss labeling. Come the morning of Wednesday, Dec. 10, the panel, presided over by John D. Conner, C.S.M.A. general counsel, takes a close and exhaustive look at labeling. Assisting Mr. Conner will be the Commissioner of Health of the City of New York, Dr. Leona Baumgartner; Dr. Leroy E. Burney, Surgeon General, Department of Health, Education and Welfare, and the Honorable George P. Larrick, Commissioner of Food and Drugs, Department of Health, Education and Welfare. Because of the significance of this discussion of precautionary labeling and the consideration it is being given by Federal and state legislators, the theme of this 45th annual meeting is: "After you spend money making the product, will your label permit you to sell it?"

Also, in the special events department will be a luncheon address, Wednesday, Dec. 10, by Fred C. Foy, president and chairman of Koppers Co. In addition to Mr. Foy's report on the state of the chemical industry, C.S.M.A. will hear from its president, James E. Ferris of Hooker Chemical Co., Niagara Falls, N.Y. The luncheon will conclude with the presentation of the 1958 C.S.M.A. Achievement Award to Dr. Emil G. Klarmann.

James E. Ferris,
President

Donald M. King,
First Vice-President

Peter C. Reilly,
Treasurer

vice-president and manager of technical services of Lehn & Fink Products Corp., New York. The sixth recipient of this honor, which was established in 1952 to single out those who have made outstanding contributions in the field of chemical specialties, Dr. Klarmann is a past president of C.S.M.A., and a member of its board of governors.

Another president who addressed this year's C.S.M.A. meeting was Osgood V. Tracy, president of Enjay Co., and vice-president of Esso Standard Oil Co. Mr. Tracy was the luncheon speaker, Dec. 9.

A full schedule of divisional meetings got under way the morning of Dec. 9, when four of the six divisions of which C.S.M.A. is composed, huddled separately and concurrently to hear addresses by their divisional chairmen. Papers dealing with technical, marketing

Program for 45th annual CSMA meeting at the Hotel Commodore N.Y.C. Tues. and Wed. Dec. 9-10

Monday Morning, December 8th

9:00 A. M. — Board of Governors Meeting
Committee Meetings

Tuesday Morning, December 9th

Aerosol Division — W. Earl Graham, presiding
9:00 A. M.

A-1 — Address of the Division Chairman, W. Earl Graham, Clayton Corporation, St. Louis

A-2—Report of the Scientific Committee, by John J. Buchanan, Continental Can Co., Chicago

A-3 — Report of the Personal Products Committee, by Morris J. Root, George Barr & Co., Chicago

A-4 — "The Role of Fragrance in Aerosol," by E. R. van Liew and Victor Di Giacomo, Givaudan-Delawanna, Inc., New York, delivered by: E. R. van Liew

A-5 — "Food Aerosol Custom Filling," by Clarence P. Clapp, Western Filling Corp., Los Angeles, Calif.

A-6 — "The Impact of Aerosols on Advertising of Consumer Products," by Joseph J. Tomlinson, General Chemical Division, Allied Chemical Corp., New York

A-7 — "Annual Aerosol Survey," by A. H. Lawrence, Jr., E. I. du Pont de Nemours & Co., Wilmington, Del.

Disinfectant and Sanitizers Division—Irving Gaines, presiding
9:00 A. M.

D-1 — Address of the Division Chairman, Irving Gaines, Onyx Oil and Chemical Company, Inc., Jersey City, N. J.

D-2 — "Problems Presented by the Presence of Micro-Organisms in Production," by R. C. Allred, Continental Oil Co., Ponca City, Okla.

D-3 — "Problems Presented by the Presence of Micro-Organisms in Finished Products," by John McGrogan, Atlantic Refining Co., Philadelphia

D-4 — "Problems Presented by the Presence of Micro-Organisms in Finished Products," by E. O. Bennett, Biology Department, University of Houston, Texas

D-5 — "Problems Presented by the Presence of Micro-Organisms in Refining," by Peter Richards, William F. Clapp Laboratories, Roxbury, Mass.

Insecticide Division — John A. Rodda, Presiding
9:00 A. M.

I-1 — Address of the Division Chairman, John A. Rodda, Fairfield Chemical Division, Food Machinery and Chemical Corp., New York

I-2 — "The Use of Ionizing Radiation for Control of Insects in Foods," by John D. Hilchey, Assistant Chief, Pesticide Section, U. S. Army Research and Engineering Center, Natick, Mass.

I-3 — Materials Symposium — Moderator: A. C. Miller, Gulf Research and Development Co., Pittsburgh, Pa.; (3a) **"Repellents,"** by Joseph B. Moore, McLaughlin Gomley King Co., Minneapolis; (3b) **"New Information,"** by G. A. Neumann, Union Carbide Chemicals Co., New York; (3c) B. Thomas Snopes, Chemagro Corp., New York, subject to be announced; (3d) **"Barthrin,"** by Stanley A. Hall, director, Pesticide Chemicals Research Laboratories, U. S. Department of Agriculture, Beltsville, Md.; (3e) **"Outlook for 'Sevin' in Chemical Specialties,"** by Richard C. Back, Union Carbide Chemicals Co., New York; (3f) **"Pioneer Systemic Insecticides,"** by D. M. Baldwin, Dow Chemical Co., Camden, N. J.

I-4 — Report of the Insecticide Scientific Committee, by Harry L. Haynes, National Carbon Co., Division of Union Carbide Corp.

I-5 — Report of The Chemical Assay Committee, by Mark L. Hill, Gulf Oil Corp., Philadelphia.

Soap, Detergents and Sanitary Chemical Products Division — Clarence L. Weirich, presiding
9:00 A. M.

S-1 — Address of the Division Chairman, by Clarence L. Weirich, The C. B. Dolge Co., Westport, Conn.

S-2 — Symposium on Use of Anionic Surface Active Agents— Moderator: Anthony M. Schwartz, Harris Research Laboratories, Inc., Washington, D. C.; (2a) **"Anionic Surface Active Agents in Heavy Duty Household Detergents,"** by C. C. Tillotson, Procter & Gamble Co., Cincinnati; (2b) **"Anionic Surface Active Agents in Light Duty Household Detergents,** by a representative of Lever Brothers Co., Research Department, Edgewater, N. J.; (2c) **"Anionic Surface Active Agents in Toiletries and Personal Products,"** by John M. Longfellow, Colgate-Palmolive Co., Research and Development Department, Jersey City, N.J.; (2d) **"Anionic Surface Active Agents in Heavy Duty Industrial Cleaners,"** by J. B. Davidson, Cowles Chemical Company, Skaneateles Falls, N. Y.; (2e) **"Anionic Surface Active Agents in Textile Processing,"** by J. Edward Lynn, Old Greenwich, Conn.

Tuesday Afternoon, December 9th

12:30 P. M. — Luncheon — Speaker: O. V. Tracy, president of Enjay Co., New York; Presentation of Aerosol Package Contest Awards to Winners, by Frederick G. Lodes, Lodes Aerosol Consultants, Inc., chairman of contest committee

2:30 P. M. — Automotive Division—A. James Coulter, presiding

Au-1 — Address of the Division Chairman, A. James Coulter, Gulf Oil Corp., Pittsburgh, Pa.

Au-2 — "What Can Motivation Research Do for the Manufacturer of Automotive Chemical Specialties," by John Kishler, Institute of Motivation Research, Inc., Croton-on-Hudson, N. Y.

Au-3 — "Which: Aluminum Engine or Absentee Passenger?," by James M. Smith, Aluminum Co. of America, Cleveland

Au-4 — "Can Automotive Engine Coolants Keep Pace With Future Demands?," by Leonard C. Rowe, General Motors Corp., Detroit, Mich.

Au-5 — "Trend in the Development of Automatic Transmission," by Raymond I. Potter, Ford Motor Corp., Dearborn, Mich.

2:30 P. M. — Waxes and Floor Finishes Division — C. S. Kimball, presiding

W-1 — Address of the Division Chairman, by C. S. Kimball, Foster D. Snell, Inc., New York

W-2 — "A New, Simplified Technique for the Manufacture of Dry-Bright Wax Emulsions," by Irwin Y. Straus, Dura Commodities Corp., New York.

W-3 — "Acrylic Emulsion Polymers — Their Uses and Formulating Principles," by George L. Brown and Richard E. Zdanowski, Rohm & Haas Co., Philadelphia, delivered by: Richard E. Zdanowski

W-4 — "Laboratory Correlations and Scoring of Floor Serving Tests," by Isidore Shafiroff, R. M. Hollingshead Corp., Camden, N. J.

W-5 — Report of the Scientific Committee, by Donald E. Whyte, S. C. Johnson & Son, Inc., Racine, Wisc.

Tuesday Evening, December 9th

6:00 P. M. — "Open House Party"

Wednesday Morning, December 10th

10:00 A. M. — General Session — John D. Conner, Cummings, Sellers, Reeves, and Conner, Washington, D. C., presiding
Report of the Secretary, H. W. Hamilton, Chemical Specialties Manufacturers Association, New York
Report of the Treasurer, P. C. Reilly, Reilly Tar & Chemical Corp., Indianapolis
Address of the President, James E. Ferris, Hooker Chemical Co., Niagara Falls, N. Y.
Dr. Leona Baumgartner, Commissioner of Health, City of New York, New York, subject to be announced
Leroy E. Burney, Surgeon General, Department of Health, Education and Welfare, Public Health Service, Washington, D. C., subject to be announced
Honorable George P. Larrick, Commissioner of Food and Drugs, Department of Health, Education and Welfare, Food & Drug Administration, Washington, D. C., subject to be announced

Wednesday Afternoon, December 10th

12:30 P. M. — Luncheon — Speaker: Fred C. Foy, president of Koppers Co., Pittsburgh, Pa.
Presentation of Achievement Award to Dr. E. G. Klarmann, Lehn & Fink Products Corp., New York

2:30 P. M. — Aerosol Division — W. E. Baulieu, presiding

A-8 — "Success With Safety," by Roy M. Barnes, Jr., E. I. du Pont de Nemours & Co., Wilmington, Del.

A-9 — "The Determination of Skin Chilling Effects of Various Propellants and Mixtures in Different Solvent Systems," by T. F. Dunne, General Chemical Division, Allied Chemical Corp., Edgewater, N. J.

A-10 — "Consideration of Moisture in the Aerosol Industry," by E. E. Husted, Union Carbide Chemicals Co., N. Y.

A-11 — "Aerosol Aspects of Toiletries and Cosmetic Research," by Donald H. Powers, Warner-Lambert Institute, Morris Plains, N. J.

A-12 — "Viscosity-Pressure-Time Factors in Dispensing Aerosol Liquids," by Francis A. Mina, Lodes Aerosol Consultants, Inc., New York

2:30 P. M. — Automotive Division

Au-6 — Committee Reports

Au-7 — "Labeling Requirements for Automotive Products," by Nicholas M. Walker, Pennsalt Chemicals Co., Phila., Pa.

Au-8 — "Need for Cleaners and Waxes on the New Automotive Finishes," by K. F. Parr and D. E. Whyte, S. C. Johnson and Son, Inc., Racine, Wis.

Au-9 — "Glycerine in Automotive Specialties," by B. Berkeley, Foster D. Snell, Inc., New York

Au-10 — "Dent Fillers for Automotive Use," by David Travis, R. M. Hollingshead Corp., Camden, N. J.

2:30 P. M. — Joint Session — Disinfectant and Sanitizers Division and Insecticide Division

D-I-1 — "Why More Laws?," by Justus C. Ward, Head, Pesticide Regulation Section, U.S.D.A.

D-I-2 — Richard W. Fay, Technical Development, Communicable Disease Center, Public Health Service, Savannah, subject to be announced

D-I-3 — "Is There a Market For Combined Insecticide/Disinfectant Formulations?," by Joseph Lee, Chemical Division, McLaughlin Gormley King Co., Minneapolis

D-I-4 — N. W. Desrosier, U. S. Quartermaster Corps, Radiological Laboratory, Chicago, subject to be announced

2:30 P. M. — Soap, Detergents and Sanitary Chemical Products Division

S-3 — "Methods of Analysis of Fluorescent Brighteners," by L. E. Weeks, Monsanto Chemical Co., Research Department, St. Louis

S-4 — "Synthetic Technique of Demonstrating the Efficiency of Deodorant Soaps or Detergents in the Prevention of Body Odor Development," by Robert C. Ferris and Walter K. Lorenz, Purex Corp., South Gate, Calif., delivered by: Robert C. Ferris

S-5 — "Detergent Patents from the Research View," by N. W. Berst. The Diversey Corp., Chicago

2:30 P. M. — Waxes and Floor Finishes Division — Earl Brenn, Huntington Laboratories, Inc., Huntington, Ind.

W-6 — "Hardness Testing of Films of Floor Finishes," by George J. Fuld, Massachusetts Institute of Technology, Cambridge, Mass., Melvin Fuld and Harry Broll, Fuld Brothers, Inc., Baltimore, Md.

W-7 — "The Determination of Chlorine in Bleached Shellac," by Orlando Tweet, W. K. Miller and R. H. Simon, S. C. Johnson and Son, Inc., Racine, Wisc., delivered by: Orlando Tweet

W-8 — "Epoxy Floor Coatings," by A. F. Bohnert, Vice President and Technical Director, Federal Varnish Division, Chicago

W-9 — "Polymers," by Joseph Zevallos, Reichhold Chemicals Inc., Elizabeth, N. J.

Wednesday Evening, December 10th

6:00 P. M. — Reception and cocktail party

7:30 P. M. — Banquet

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and other phases of household and industrial chemical specialties were presented at these sessions.

Holding inaugural meetings Tuesday afternoon, Dec. 9, will be the Automotive and Waxes and Floor Finishes Divisions.

Again, as if to emphasize the wide range of fare on the meeting menu, there will be a session during the afternoon of Dec. 9 at which motion pictures will be shown.

The social side of the meeting comes into play later on the same afternoon when the period set aside for company open house parties in suppliers' suites begins at 5:30 p.m.

The general session, at which the panel on precautionary labeling will be heard, Wednesday morning, Dec. 10, begins with reports of the secretary, H. W. Ham-

H. W. Hamilton,
Secretary

ilton; treasurer, Peter C. Reilly, Reilly Tar & Chemical Co., Indianapolis, and the nominating committee. At this time, too, a proposal to amend the constitution and by-laws of C.S.M.A. is scheduled to be voted on. Principal changes proposed would make it possible for an associate member to become an active member upon written request. In addition, the governing group of each division would be renamed "Division Executive Board." Each division at its annual business meeting would determine the number of members of the division's executive board, which could range in number from three to seven. At present, divisional administrative committees, as they are known, are composed of a chairman, vice-chairman and three other members. Also provided for in the changes is that "not more than two members of each division exectuive board may be elected from the associate membership, provided that both the divisional chairman and the division vice-chairman shall not be elected from among the associate membership to serve at any one time.

The 45th annual meeting heads into the homestretch Wednesday afternoon, Dec. 10, when the following divisions gather for their second sessions: Aerosol; Automotive; Soap, Detergents and Sanitary Chemical Products; Waxes and Floor Finishes. The Insecticide Division and the Disinfectant and Sanitizers Division meet jointly to discuss such subjects as "Why More Laws?," "Insect Borne Diseases," "Is there a market for combination insecticide-disinfectant formulations?" and "Control of microorganisms and insects."

Meanwhile, the Automotive Division hears the following papers: "Labeling Requirements for Automotive Products"; "Need for Cleaners and Waxes on New Automobile Finishes"; "Glycerine in Automotive Specialties" and "Dent Fillers for Automotive Use."

Also featured for Wednesday afternoon, Dec. 10, are these papers to be given before the Soap, Detergents and Sanitary Chemical Products Division: "Methods of Analysis of Fluorescent Brighteners"; "Synthetic Technique of Demonstrating the Efficiency of Deodorant Soaps or Detergents in the Prevention of Development of Body Odor"; and "Detergent Patents from the Researcher's Point of View."

At the meeting of the Waxes and Floor Finishes Division papers will be read on: "Hardness Testing of Films of Floor Finishes"; "The Determination of Chlorine in Bleached Shellac"; "Epoxy Floor Coatings" and "Polymers."

The Aerosol Division, also meeting Wednesday afternoon, Dec. 10, will take up: "Success with Safety"; "Determination of Skin Chilling Effects of Various Propellants and Mixtures in Different Solvent Systems"; "Consideration of Moisture in the Aerosol Industry"; "Aerosol Aspects of Toiletries and Cosmetic Research"; "Viscosity-Pressure-Time Factors in Dispensing Aerosol Liquids."

A. A. Mulliken,
Assistant Secretary

The final scheduled event of the meeting will be the cocktail party, banquet and floor show, Wednesday evening, Dec. 10.

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Webb Appoints Wolfe

Harlan R. Wolfe has been appointed to the Chicago sales staff of R. D. Webb & Co., Inc., Cos Cob, Conn., it was announced in November. He covers the Michigan, Ohio, Indiana, and Kentucky areas.

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SOCMA Presents Slate

A slate of candidates for 1959 officers and members of the board of governors (class of 1961) was selected last month by the nominating committee of the Synthetic Organic Chemical Manufacturers Association of the United States, New York, it was reported recently by E. Edgar Fogle, acting for Robert E. Horsey, chairman of the committee.

Candidates for officers of the association include: president, Samuel G. Baker, E. I. du Pont de Nemours & Co.; first vice-president, Carl A. Gerstacker, Dow Chemical Co.; second vice-president, Chester M. Brown, National Aniline Division, Allied Chemical Corp.; and treasurer, James A. Singmaster, Jr., Monsanto Chemical Co. Nominated as board members were C. Kenneth Egeler, Sherwin-Williams Co., and Thomas C. Keeling, Jr., chemicals and dyestuffs division, Koppers Co., Inc. Honorary board members (class of 1959) include Dr. Elvin H. Killheffer of Jensen Beach, Fla., and Dr. August Merz of American Cyanamid Co.

Continuing on the board of governors (class of 1959) are Norman C. Babcock, Union Carbide Olefins Co., and John W. Orelup, Patent Chemicals, Inc. J. R. Frorer, Atlas Powder Co., and Richard Kithil, The Carwin Co., continue as members of the board of governors (class of 1960).

Improved exterior finishes on 1959 automobiles form the basis for some pretty extravagant claims when it comes to waxing. Among the more moderate ones are those for the 1959 Dodge. Its maker says "Lustre-bond Hi-baked enamel finishes . . . require far less frequent polishing and waxing." Other auto makers say cars never need waxing.

New Automobile Finishes . . .

Do they need wax protection?

By K. F. Parr and D. E. Whyte*
S. C. Johnson & Son, Inc.
Racine, Wis.

SINCE the introduction of the new "Lucite" lacquers and the new non-oxidizing enamels, there have been conflicting reports regarding the use of wax on these finishes. Many of the reports state that waxing is not required for 18 months and others even go so far as to advocate no waxing whatsoever. The new finishes do offer to the consumer greater durability which does mean easier and less maintenance. However, there is no doubt that waxing is advantageous. Our purpose is to show the advantages of wax protection by presenting the results of weathering tests conducted with both the new and old finishes for a 19 month period. This test shows the value of wax protection as manifested by better general appearance and reduced chalking or dulling.

Before we discuss the results of the test, we shall review briefly the differences between the new and old lacquers and enamels. The automotive and paint manufacturers spent a number of years developing the acrylic lacquers and non-oxidizing enamels. In 1955 both were announced to the public and used in a limited way on production cars. At the present time, these finishes are in wide use and available in many colors.

Acrylic Lacquers

The "Lucite" lacquers differ from the conventional lacquers in that an acrylic resin has replaced nitrocellulose as the binder. "Lucite" lacquers are much like the nitrocellulose lacquers in that they dry by solvent evaporation, they possess the same general characteristics with regard to spraying and processing, and they can be spot repaired. The most important feature of "Lucite" lacquers bene-

*Paper presented at the 44th annual meeting of the Chemical Specialties Manufacturers Association, Hollywood, Fla., Dec. 11, 1957.

fiting the customer is their greater resistance to chalking or dulling. This is a result of the acrylic resin being used as the binder, which is much more resistant to the detrimental effects of sun and moisture. It is this improvement in performance that led to the confusion regarding the need for waxes. Technical releases by the paint and automobile manufacturers claimed, "greater resistance to weathering." However, this was interpreted by many as no weathering at all, therefore, no need for waxing.

Another advantage of acrylic lacquers is their resistance to staining by oils, grease and tar. With conventional lacquers these materials cause a yellow discoloration but with the acrylic lacquers this problem is eliminated. The increased resistance to break down of the acrylic lacquers has made possible the use of colors which before were not durable enough for production use. This is especially true with the glamor colors where a substantial quantity of aluminum flake pigment is used.

There is little initial difference in appearance between the acrylic and nitrocellulose lacquers. In some instances the acrylic is not as uniformly smooth, because the increased hardness of the acrylic lacquers makes compounding more difficult sometimes resulting in dull and rough areas. The "Lucite" lacquers do present some problems in maintenance not encountered with the conventional lacquers, particularly with regard to the use of solvents. Unlike nitrocellulose lacquers, "Lucite" is soluble in aromatic hydrocarbons but not soluble in aliphatic hydrocarbons. Products, such as tar removers, which use sizeable quantities of aromatics are not suitable for the acrylic lacquers.

Non-Oxidizing Enamels

The new enamels sometimes called "refrigerator enamels" or more technically, non-oxidizing alkyd, high melamine resin enamels, offer the same general advantages over the conventional enamel to the car owner as does the acrylic lacquer over the nitrocellulose lacquer. In appearance there is no noticeable difference between the materials. The main difference in composition is that the new enamels use a different alkyd resin and have increased amounts of melamine resin. Conventional enamels use an alkyd resin containing a vegetable oil, such as linseed or soybean, as as film forming material with melamine resin included to add hardness. It is generally agreed that the break down of these enamels was due to the oil portion of the film. To prevent this break down, a new alkyd resin was used that eliminated the need for these types of vegetable oils. At the same time, the melamine resin content was increased to produce a harder, more durable film. These changes have altered the hardening process and give the new enamels their improved properties.

Conventional enamels harden as a result of oxidation combined with polymerization. This process takes place relatively slowly at normal temperatures but quite rapidly at high temperatures, such as 250°F. The oxidation reaction continues beyond the desired point as the finish ages on the car and ultimately goes to the point of aiding in the break down of the film. With the new enamels, this difficulty is eliminated as the hardening process is completed after baking. Instead of hardening by oxidation, the new enamels cure primarily by heat converting or curing of the melamine resin which takes place only at elevated temperatures. This results in a harder film with improved durability.

The main advantage of the new non-oxidizing enamels to the consumer is their greater gloss retention. This increased resistance to dulling or chalking has made possible the use of metallic and other glamor colors not possible before. The new enamels also offer greater resistance to blistering and crazing which can occur with the conventional enamels. To the automotive manufacturer, the new enamels offer superior resistance to discoloration even on repeated baking. In order to produce the multicolored cars of today, it is necessary to process a car body through the baking ovens several times. Conventional enamels show considerable discoloring while the new enamels exhibit no noticeable change.

The increased hardness of the new enamels does present some disadvantages particularly in refinishing. Special precautions must be taken to insure proper adhesion of the repair coat.

Purpose of Test

The purpose of our test was to determine the actual increase in gloss retention of the new finishes over the conventional materials and ascertain if waxing would be noticeably beneficial in reducing dulling or chalking. Wet samples of both the old and new lacquers and enamels were obtained from the automotive and paint manufacturers. A variety of colors were obtained including direct color matches in both old and new lacquers and enamels.

Number 18 gauge, cold-rolled steel (eight by 20 inches) was used for the test panels. The panels were cleaned chemically and sprayed with a red oxide primer which was baked for 30 minutes at 250°F. The primer was sanded lightly followed by the color coat applied in a manner similar to actual production techniques. The lacquers were forced dried and the enamels baked for 30 minutes at 250°F. The lacquer panels were compounded and polished with an electric buffer.

A complete set of panels consists of a control, one waxed and one unwaxed. The control was put away in a drawer. The waxed and unwaxed panels were placed on the test fence in a horizontal position. The horizontal was used as it offers the most severe weathering condi-

tions, as is the case on the hood, top and trunk of a car. Monthly inspections of the panels were made at which time all panels were washed in clear water and the waxed panels rewaxed with "Johnson's J-Wax."

The pictures show graphically the difference between the panels. A distinct color difference in many of the panels was detected by the naked eye, although it was not possible to capture this on black and white film. We have reflected a checker board pattern in the panels which shows the difference in gloss. Inasmuch as dulling or chalking of painted surfaces reduce the reflective properties, we feel this method accurately presents differences in weathering.

Figure 1, shows a "Lucite" lacquer, Sandalwood Tan, used by Pontiac. The waxed and unwaxed panels have been exposed to weathering for 19 months. It was observed that there was a slight color difference in the unwaxed panel as compared to the other two and also poorer reflection of the pattern indicating dulling. You can also see that the waxed panel has more gloss than the control. Gloss-meter readings also demonstrate some of the difference in these panels. The waxed panel has the highest reading which was 91, the control was 82 and the unwaxed 69.

Pontiac's Sandalwood Tan, but in the conventional lacquer, is shown on Figure 2. There was a distinct color difference in the weathered panel and no reflection of the pattern. It can also be seen that the control panel has better gloss than the waxed panel which was not the case with the acrylic lacquer. This indicates that the conventional lacquers did dull and fade considerably, even with wax protection. Gloss-meter readings again show the great difference in gloss. The control panel has a gloss of 89, the waxed 79 and the unwaxed 17.

The waxed and unwaxed panels of the two previous pictures are compared in Figure 3; that is,

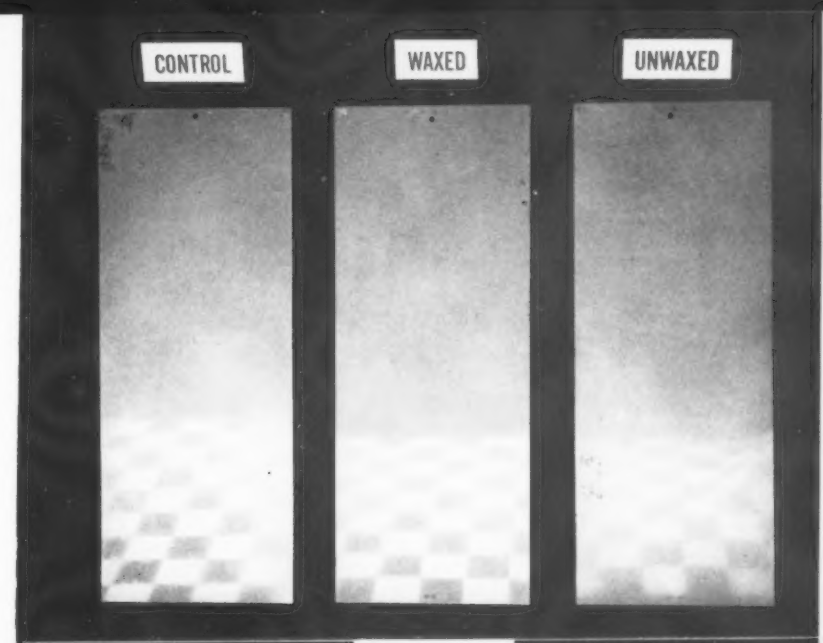


Figure 1

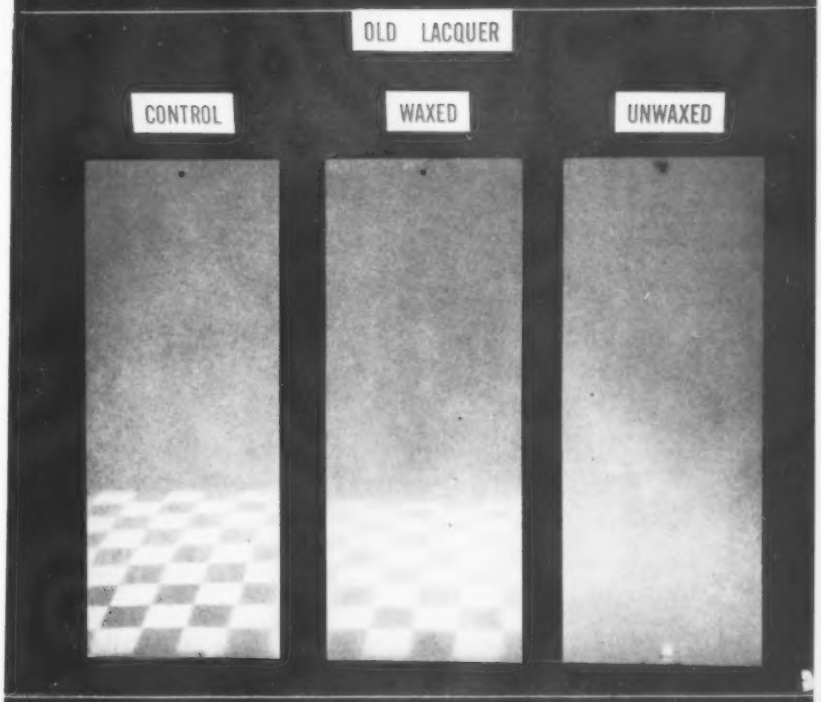


Figure 2

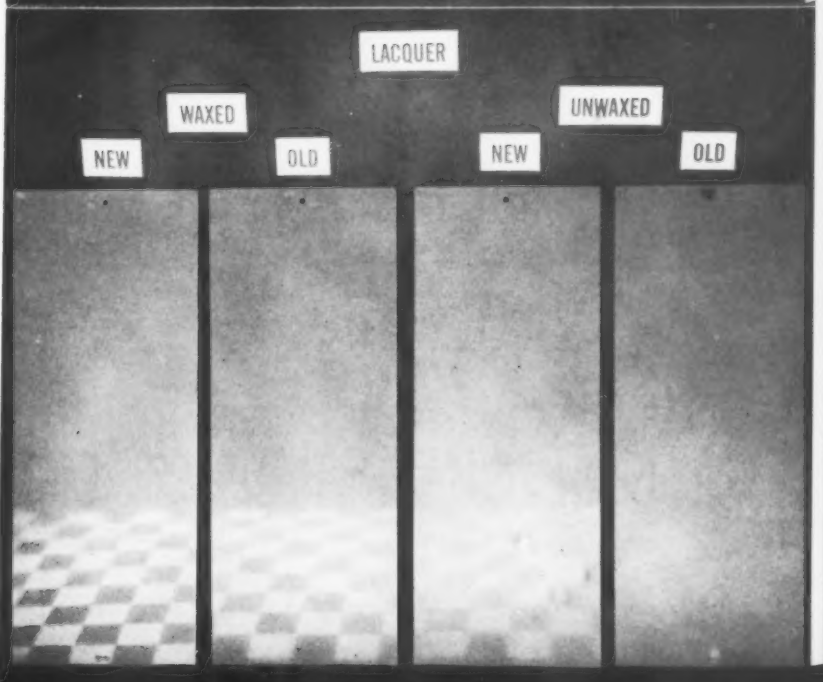


Figure 3

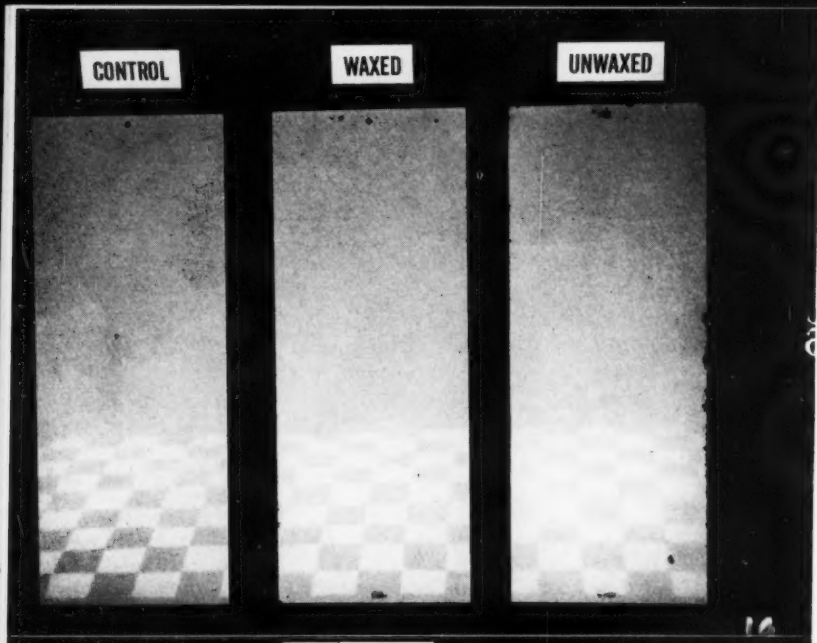


Figure 4

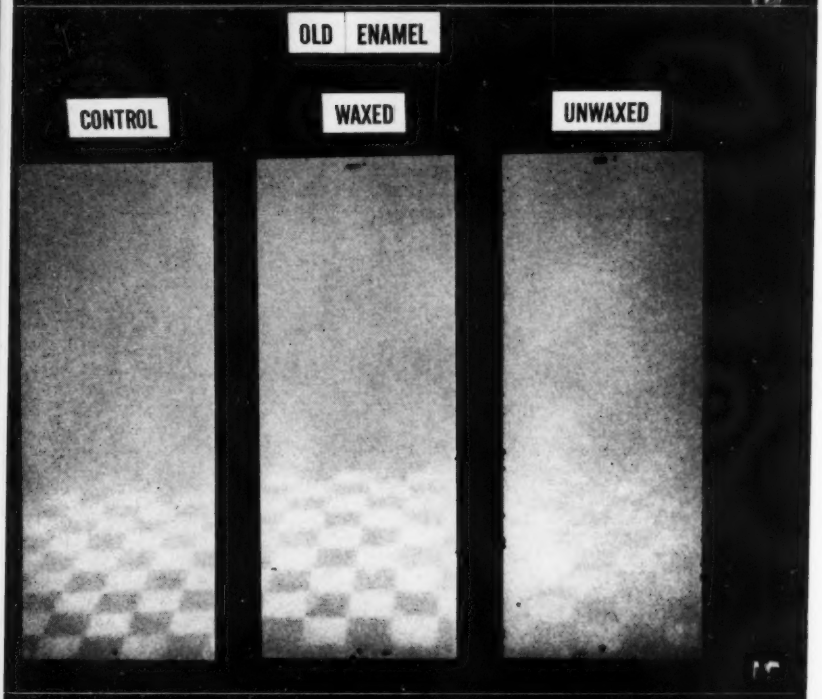


Figure 5

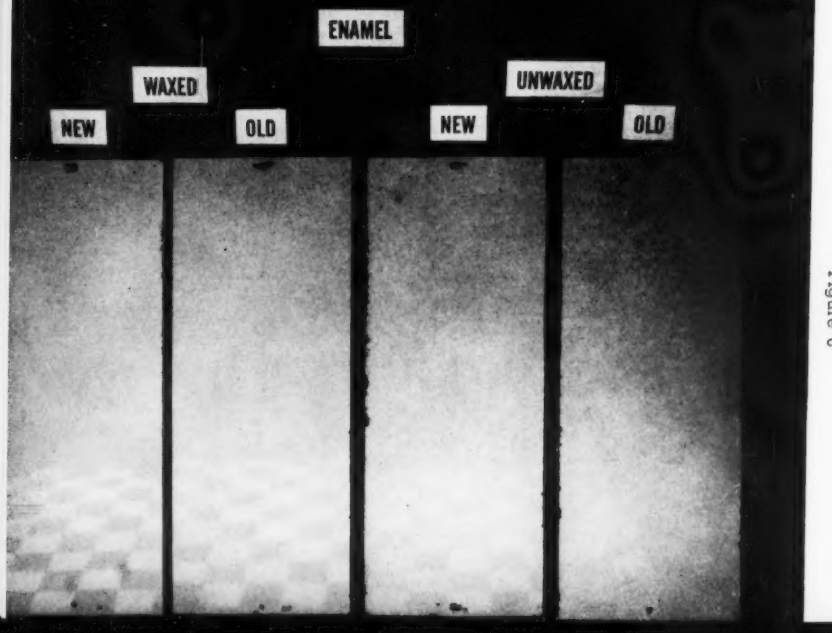


Figure 6

we have taken the controls out. It can be readily seen by comparing unwaxed panels that the "Lucite" lacquer has better gloss retention than the conventional lacquer. This difference is also evident in the waxed panels. A comparison of the waxed and unwaxed panels shows the definite benefits of wax protection to both the new and old finishes.

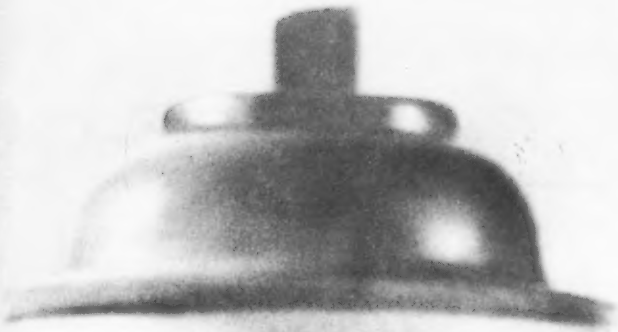
A new non-oxidizing enamel produced by Ditzler and called Glacier Blue appears in Figure 4. The unwaxed panel shows relatively good gloss after 19 months weathering and is considerably better than the unwaxed "Lucite" lacquers shown before. However, as was true with the lacquers, the waxed panel shows more gloss than either the control or the unwaxed. Gloss-meter readings again show these differences as the waxed panel has a gloss of 98, the control 92 and the unwaxed 85.

Figure 5. Shows the same color by Ditzler in the conventional enamel. There is quite a difference between the waxed and unwaxed panels and the waxed is better than the control. The waxed panel has a gloss reading of 91, the control 81 and the unwaxed 61.

The waxed and unwaxed panels of the two previous photographs are compared in Figure 6. Note the great difference in the unwaxed panels with the new enamel being much better, indicating improved gloss retention. A comparison of the waxed panels also shows the new enamel has better gloss. Here as with the new lacquers, the beneficial effects of wax protection are readily apparent.

These pictures illustrate that the new finishes do offer superior gloss retention over the conventional materials. They also demonstrate that wax protection is of definite value for the new finishes in that it enhances their appearance by providing more gloss and can effectively deter the detrimental effects of sun and moisture.

(*Turn to Page* 249)



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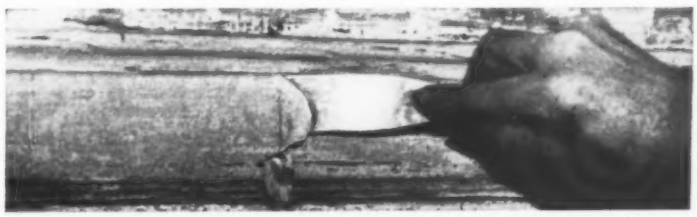

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Newly elected officers and directors of the Canadian Manufacturers of Chemical Specialties Association include (seated, left to right): Treasurer, Gordon S. Lang, Connecticut Chemicals (Canada) Ltd.; vice-president, R. L. Jones, Colgate-Palmolive Ltd.; president, George E. Flemming, Guardian Chemical & Equipment Co., Ltd.; vice-president, Geoffrey H. Wood, G. H. Wood & Co., Ltd.; and secretary, A. Robins, Cartier Chemical Co., Ltd., all re-elected. Directors (standing, left to right) include: G. V. Jansen, S. C. Johnson & Son Ltd.; John Kennedy, W. Alan Kennedy, Ltd.; Arthur H. Carter, Green Cross Products; R. T. Howard, A. H. Howard Chemical Co., Ltd.; H. J. Chamberlain, Canadian Germicide Co., Ltd.; R. S. Sweet, Success Wax Ltd.; and J. G. Clough, Clough Chemical Co., Ltd.

Canadian Specialties Makers Meet

CLOSE to 200 Canadian manufacturers of chemical specialties and their suppliers of raw materials, containers, filling machines and related supplies from both the U. S. and Canada attended the first annual meeting of the Association of Canadian Manufacturers of Chemical Specialties. The meeting-packed three day gathering of the newly formed association took place Nov. 12-14, at the Queen Elizabeth Hotel, Montreal.

Three new directors were elected and all provisional officers were reelected, including George E. Flemming, head of the Guardian Chemical & Equipment Co., Montreal. He has been president of the Association of Canadian Chemical Specialties Manufacturers since its founding last March. The new name, (Association of) Canadian Manufacturers of Chemical Specialties (C.M.C.S.) was adopted during the annual meeting in Montreal to replace the earlier name and abbreviation, which were found to conflict with those of another Canadian group.

Next year's meeting site and date, probably the Royal York Hotel in Toronto, sometime in November, were to have been decided on at a meeting of the board of directors of C.M.C.S. in Toronto, Nov. 29.

Main topic of interest during the first day of the meeting, Wednesday afternoon, Nov. 12, was the question of revising the Canadian tariff law. Canadian chemical specialties manufacturers at informal sessions of the various divisions of C.S.M.C. expressed themselves as favoring low tariffs on raw materials and substantially higher tariffs on imported finished products. The problem of bringing up to date and clarifying var-

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ious chemical classifications were touched on lightly, but no decisions were reached other than "something must be done about them."

The formal opening of the convention got underway with the annual business meeting the morning of Nov. 13. At this meeting, which was in effect an organizational meeting since the association has been operating on a provisional basis since its founding in March, 1958, the following officers and directors were chosen:

President, George E. Flemming, Guardian Chemical & Equipment Co., Montreal; First vice-president, G. H. Wood, G. H. Wood & Co., Toronto; Second vice-president, R. L. Jones, Colgate-Palmolive, Ltd., Toronto; Secretary, A. Robins, Cartier Chemical Co., Lachine, Que., and Gordon S. Lang, Connecticut Chemicals (Canada), Ltd., Toronto, all re-elected.

Directors: A. H. Carter, Green Cross Products, Montreal, reelected; H. J. Chamberlain, Canadian Germicide Co., St. Johns, Que., new; J. Gordon Clough, Clough Chemical Co., St. Johns, Quebec, new; R. T. Howard, A. H. Howard Chemical Co., Orangeville, Ont., reelected; G. V. Jansen, S. C. Johnson & Son, Ltd., Brantford, Ont., reelected; John Kennedy, W. Alan Kennedy, Ltd., Toronto, new; R. S. Sweet, Success Wax, Ltd., Quebec, Que., reelected.

The first of two simultaneous sessions held by four of the divisions of the association got underway the afternoon of Nov. 13. Meeting at the same hours were the pesticides and waxes and floor finishes divisions, both of which began at 2:15 p.m. The aerosols and soaps and detergents divisions, held concurrent meetings starting at 4:15 p. m.

Highlighting the pesticides division meeting was a discussion of the work of the Canadian Beautification Association by Bearce P. Campbell, chairman of the organization. He also made a proposal for the collaboration of the Canadian Manufacturers of Chemical Specialties and C.B.A.

George E. Flemming, head of Guardian Chemical & Equipment Co., Montreal, just after his election as president of the Association of Canadian Manufacturers of Chemical Specialties, shakes hands with James E. Ferris, Hooker Chemical Co., Niagara Falls, N. Y., and president of Chemical Specialties Manufacturers Assn.

Tying in with this theme of community beautification were two other presentations at this session. One dealt with the weed control program of Montreal, the other covered the work of the Canadian Department of Agriculture's efforts in conducting a community mosquito control program.

M. A. LeBlanc, Forestry Division, Botanical Gardens, Montreal, described and showed a film of the work of controlling and eliminating ragweed, poison ivy and wild parsley in the Montreal area. His conclusion after 12 years of community weed control is that the use selective herbicides is the best method of weed control.

Bearce P. Campbell

Organized mosquito control is a fairly recent development in Canada because mosquitoes have not been implicated as communicable disease vectors in that country, J. F. Sharp of the Entomological Division of the Canadian Department of Agriculture, Ottawa, told the pesticides forum. As a result, he said, most efforts have concentrated on mosquito control to eliminate these pests as a source of discomfort. However, the presence of mosquitoes does have an effect on such industries as lumbering, agriculture, and recreation, whether in the woods, in resorts or at home. In this sense moth control is important economically, and as a field is still wide open.

"Effective mosquito control," Mr. Sharp continued, "is highly complicated. It must be a community effort and in many cases it must cover an area larger than the community itself, since breeding areas may be outside the limits of the affected community."

Three phases of mosquito control programs that are essential, according to the speaker, are:

1.) Surveys of breeding areas;
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Mr. Sharp stated that no DDT resistant mosquitoes had been reported in Canada. He advocated also the combination of insecticiding and larvaciding as the most effect means of mosquito control.

He also pointed out that diethyl toluamide is one of the best insect repellents yet discovered for treating of both skin and clothes.

Waxes & Floor Finishes

Future new developments in floor waxes already discernible were discussed in a paper by Lee M. Prince and Dr. J. Zevallos of Reichhold Chemicals, Inc., Elizabeth, N. J., during the first session of the Waxes and Floor Finishes Division.

Developments predicted by Mr. Prince included copolymers of acrylics with styrene and other monomers. "Some of these," he said, "are already available; others, of more improved performance, are just around the corner. The objectives of these modifications will be to combine the good features of both styrene and the acrylics and, at the same time, lower price and improve performance."

Dr. Prince also predicted the elimination of plasticizers from the finished formulations.

He indicated too that "consideration is also being given to making polymer emulsions which will spread evenly over vinyl tile and other flooring surfaces which

Lee M. Prince

Irwin Y. Straus

are presently difficult to coat. The recent elucidation of the physicochemical principles involved has given impetus to such a development," Dr. Prince pointed out.

In conclusion, he said, that "since gloss is the prime performance characteristic of floor polishes, and since polymer systems possess a potential for gloss much higher than that for wax systems, it is logical to expect a big improvement in this area in the foreseeable future."

The paper by Prince and Zevallos, which bore the title, "Recent Trends in Aqueous Floor Polish," also dealt with some of the early history of the so-called "self-polishing" floor wax industry.

Properties sought in water emulsion floor waxes and how they are being achieved through the use of emulsion-polymers, resins and synthetic waxes were discussed by Irwin Y. Straus, Dura Commodities Corp., New York. In the paper, "Practical Considerations in Film Property Improvement of Synthetic Polymer Floor Dressings," Mr. Straus pointed out that there are bound to be compromises among the various properties sought in floor waxes.

"In contrast to many coatings," he said, "the floor polish film is meant to be temporary. Yet, modern requirements are such that it must give satisfactory service and appearance, often under severe use, for a long period of time. Floor polishes are expected to be highly water resistant, yet they must be readily removable with common alkalis, soaps or detergents. They must be highly scuff-resistant and also show minimum heel marking and dirt pick-up. Yet, they must be buffable and maintainable by means of a rotating brush, lambs wool pad or by damp mopping. The polish film must not powder or flake, yet it must be hard. It must have a high co-efficient of surface friction to prevent accidental slips and falls. It must be as free as possible from discoloration and resist ultraviolet light rays and heat."

"All this," Mr. Straus said, "is to be accomplished by a film whose thickness can only be measured in microns. The average dry weight of floor polish applied in industrial and institutional maintenance is about eight to 10 ounces per 1,000 square feet. Yet, this film must dry to a high gloss, and through its optical depth effect, must bring out the color brightness of the substrate to the highest degree."

Aerosols Division

The role of silicones in aerosols, as discussed by John A. Fisher of Dow Corning Silicones, Ltd., Toronto, was the opening presentation of the first meeting of the aerosol division. Following the showing of a film of silicone production and applications, entitled, "Miracle from Earth," Mr. Fisher enumerated a long list of actual

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and potential uses of silicones in aerosols. Among major current uses are automotive and furniture polishes, glass cleaners, water repellents, and release agents and preservatives for rubber. Future potential silicone applications, also in pressure packages, include use in protective coatings for chromium automobile parts, and as a muffler paint, for leather polishes, protectants and preservatives. Silicones may also find use in insecticides to prolong their efficacy, and in hair sprays to provide deeper gloss and to overcome tangling. Industrially, silicone-containing specialties which may find future applications include products for defoaming, rust prevention and release compounds.

Aerosol Containers

A 22 per cent increase in sales of aerosols in Canada in 1958, as compared with 1957, was predicted in a paper dealing with "Development of Metal Aerosol Containers—Past, Present and Future," by J. M. Demsey, Jr., assistant manager, research, Continental Can Co. of Canada, Ltd., Montreal. Sales of pressure packages in Canada should reach 17 million units this year, and in 1961 this figure might increase to 30-35 million. The latter range is conservative if food aerosols achieve their expected acceptance by the public, Mr. Demsey said. He also pointed out that per capita consumption of aerosols in the U.S. was about 2½ in 1957, and by 1961 should be expanded to four. In Canada per capita consumption in 1957 was about three-quarters of a unit, and should reach two units by 1961.

Other future developments predicted by Mr. Dempsey were: 1.) A wide range of new and different materials for use in aerosol containers, including a composition material, which he termed "a certainty." 2.) Growing recognition of the importance of the aerosol method of applying products, including pharmaceuticals, not now available in aerosol form. 3.) Consumers will pay for convenience in a product and its application, a factor that will take on more significance as people grow lazier and lazier. 4.) Greater stress on unit packaging, as well as on the use of "king" size packages. 5.) Pressure for standardization of container sizes. 6.) The food field will be the biggest industry to adopt the aerosol method of dispensing. It will also provide aerosol fillers with their greatest challenge. 8.) Metered aerosol valves may offset the economic advantages offered by products packaged in standard containers.

In reviewing their early history, Mr. Dempsey defined "aerosols" and pointed out that most pressure packaged products are not true aerosols. The word aerosol, he said, now refers more to a method of packaging than to a spray.

Although the high pressure "bug bomb", of which 40 million one pound units were purchased by the armed forces during World War II, was completely satisfactory, the requirements for a low-pressure civilian aerosol container were different. Such a container, according to Mr. Demsey, had to be inexpensive enough to be thrown away after use; its contents must be completely exhausted; it had to offer enough convenience to offset its additional cost over conventionally packaged products; it had to be light weight; and have a simplified valve.

While the light weight can was available for packaging aerosols, there was no suitable valve on the market, mostly because no valve maker was interested in spending the money necessary for the research involved in the development of a successful valve. According to Mr. Demsey, this de-

(*Turn to Page* 137)

Head table and view of some of those attending C.M.C.S. group luncheon in Monreal, Nov. 13.

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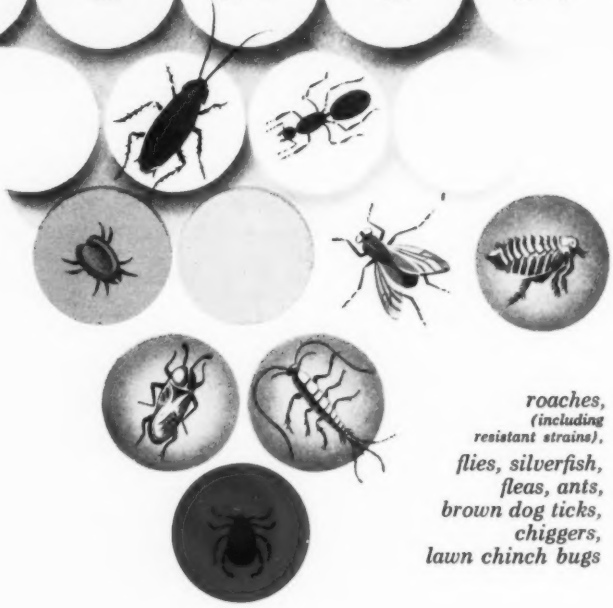

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Development of a general purpose

Disinfectant for Military Use

By William G. Mizuno, Morris R. Rogers and Arthur M. Kaplan.*

Economics Laboratory, Inc.
St. Paul, Minn.

Chemicals & Plastics Division,
QM Research & Engineering Center,
U. S. Army, Natick, Mass.

A survey of the large number of chemicals and formulations available on the market today indicated that only a few compounds would be suitable for a dry type, concentrated disinfectant which will fulfill a variety of essential military requirements. The first essential requirement for such a disinfectant is that the formulation must be dry and in a concentrated form to save space and to make for easier handling. The primary use for this type of disinfectant is for the disinfection of the contents of field latrine buckets. Although it is expected that such a dry type formulation will have a wide military application as a general purpose disinfectant, the object of this specific investigation is limited to the development of a concentrated formulation suitable as a field latrine bucket disinfectant. The results of the application of this dry type formulation as a general purpose disinfectant will be reported at a later date.

The disinfectant must satisfy, at least to a reasonable extent, all or nearly all of the requirements for the various conditions of military use; speed of disinfection is probably not of primary importance, although it should be accomplished within a reasonable time, i.e. within about five minutes; the temperature for most uses will probably be about 20°C, though it is possible that five to 10°C might be encountered under unusual conditions of use; the product must retain its disinfectant capacity in the presence of a high organic load; the product must be reasonably stable during shipment and storage as well as under the conditions of and during the time of use; the product must not be excessively corrosive to metals with which it will come into contact during the time of use; the product should be reasonably safe from toxicity and irritation under the conditions of use and during normal handling. In the present investigation, these military requirements have been considered with respect to the selection of the formulation which best meets these requirements.

Experimental Methods

Total nitrogen in stool: Since human excreta contain an unusually high concentration of organic matter largely as protein, nitrogen analyses by the Kjeldahl method (1) were made both on the intact stool and on the liquid material from latrine buckets.

Test cultures: Escherichia coli, American Type Culture Collection (ATCC) 26, *Salmonella typhosa*, ATCC 6539, and *Micrococcus pyogenes* var. aureus, ATCC 6538 (FDA 209) were used as test cultures in the modified (2) phenol coefficient (3) tests. *Escherichia coli* used for most of the screening tests was found to be more resistant to the germicides tested than the *Salmonella typhosa*.

Salmonella choleraesuis, ATCC 10708, and *Micrococcus pyogenes* were also used for evaluation of a few selected formulations by the use-dilution confirmation test (4).

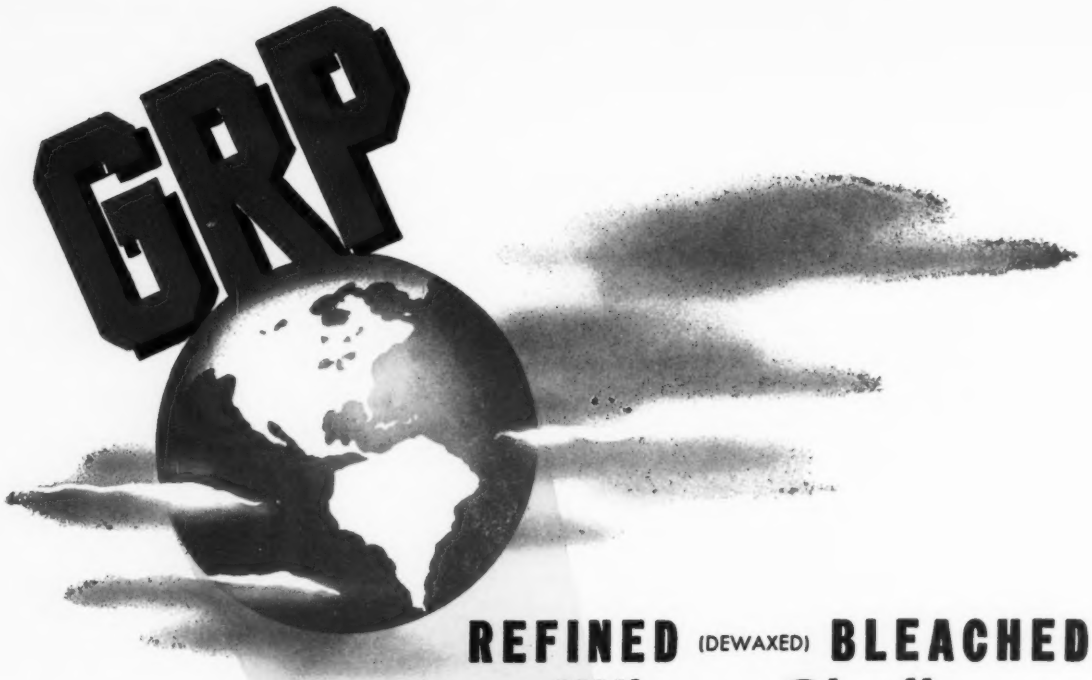
The test cultures were maintained on Bacto Stock Culture Agar following the procedure recommended in the phenol coefficient test procedure.

Bactericidal test procedures: Screening tests were carried out by the Cade and Halvorson (2) modification of the phenol coefficient test (3). In the Cade and Halvorson procedure, the germicide-culture mixture is transferred to a solid medium instead of to a liquid medium as in the phenol coefficient method.

The temperature of the test solution was maintained within plus or minus 0.5° of the stated temperature in a thermostatically controlled water bath. (Unless otherwise indicated, the temperature was 20°C). Exposure times were two, four, six and eight minutes, except where otherwise noted. "Tween" asolectin nutrient agar, made by solidifying the A.O.A.C. phenol coefficient test medium with 1.5 per cent agar, was used for the subculture medium. In other details, the phenol coefficient test procedure was strictly adhered to. A zero plate count by the Cade and Halvorson method was interpreted to correspond to "no growth" in phenol coefficient test.

Field test was carried out on a selected formulation by testing its ability to decontaminate the natural bacterial flora of the stool.

*The authors are indebted to Dr. John L. Wilson, Economics Laboratory and Drs. Paul F. Kiens and Ray Treichler, formerly of the Office of the Quartermaster General, Washington 25, D. C.



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Survival of "total bacteria" was determined by "plating out" a loopful (4 mm. I.D., 26 gauge platinum loop) of sample on tryptone glucose extract agar and the survival of coliforms was determined by inoculating simultaneously eosin methylene blue agar and lactose broth medium.

Buffers: The effectiveness of many bactericides is a function of the pH of its solution. Phenolic derivatives are reported to have their maximum bactericidal effect when one-half of the molecules are in the salt form and one-half in the acid form (5). Where it is desired to study the effect of pH to determine the optimal range, the formulations were buffered with McIlvaine's citrate-phosphate buffer (6). At the pH range near the pKa value phenolic compounds themselves had some buffering action. All pH measurements were made with a glass electrode using Coleman's Certified Buffers to standardize the pH meter in the operating range.

Shelf life test: Because the product must be stable and not lose its effectiveness during normal periods and conditions of storage, samples of a mixture of 75 per cent sodium - chloro - o - phenyl phenate and 25 per cent sodium-o-phenyl phenate (hereinafter referred to as the proposed disinfectant), were stored in a thermostatically controlled oven at 50°C and tested for residual bactericidal activity after varying periods up to and including 540 days. The product was subjected to this relatively high temperature because it is known that such temperatures are sometimes recorded in the carriers which used to transport these goods (7); furthermore, this temperature will give accelerated aging and may possibly enable one to predict in a short time what degradation might take place on longer storage at "room" temperatures. Additional stability tests which include subjecting the product to other temperature and humidity conditions are contemplated in order to obtain additional information on the ability of this product to withstand extremes of climatic conditions.

Table I. Kjeldahl Determinations on the Stool and Liquid Portions of the Latrine Bucket

	%N		% Protein (%N x 6.25)	
Sample	Stool Sample	Liquid Sample	Stool Sample	Liquid Sample
1	0.56	0.49	3.5	3.1
2	0.84	0.49	5.2	3.1
3	1.26	0.49	7.9	3.1
4	1.67	0.485	10.4	3.1
5	0.86	0.485	5.4	3.1
6	1.65		10.3	3.1
Average	1.14	0.49	7.1	3.1

Corrosion studies: Corrosion characteristics of the use solutions (0.2 to 0.5 per cent in distilled water) toward cold rolled steel and galvanized iron were determined by static immersion of 2 x 2 inch squares of the test materials for 21 hours at 37°C. The losses in weight of the test pieces were recorded and then calculated in terms of the loss in mgs./sq.cm. of total surface/24 hours. Corrosion tests on final proposed formulation showed some effect on galvanized metal, but essentially none against cold rolled steel. No further mention of this phase of the work will be made.

Toxicity and skin irritation tests: Intended use of the dry type disinfectant did not warrant extended skin irritation and toxicity tests. Day to day handling of the best phenolic disinfectant, (75 per cent sodium-chloro-o-phenyl phenate and 25 per cent sodium-o-phenyl phenate) and its solutions indicated no particular hazard. Hand soaking tests indicated that one gets only slight reddening of the skin, but definite necrosis on prolonged exposures. Military toxicity clearance for 15,000 ppm aqueous solution of the proposed disinfectant has been approved for initial use in 14 quart latrine buckets. It is considered that a latrine bucket of 14 quarts capacity will be emptied after it is half full and under such use conditions an initial charge will be so selected as to leave a final concentration of 2,000 ppm of the disinfectant.

Results

Results of the Kjeldahl nitrogen determinations on stool samples summarized in Table I indicate a wide variation in the nitrogen content from one individual to another as has been reported by others (8). This variation is probably a function of age, the amount and kind of food intake and the amount of exercise, as well as inherent differences in the metabolism of the individual.

The data indicate that intact stool contains about seven per cent protein, while the liquid contains about three per cent protein. Assuming that there is about equal weight of liquid and solid, the average protein contents of the waste in the latrine bucket is about 5.0 per cent protein.

These figures would indicate that about five per cent protein ought to be added to the test solution in a germicidal performance test. In the majority of the tests reported the organic matter load was supplied by adding 5.0 per cent peptone to the disinfectant solution.

Various types of compounds were selected for screening based on our previous experience and indications in the literature; some of these were expected to be of limited value, but were tested in order to obtain comparative and more complete information, since not all of the tests reported in the literature were carried out under the same conditions.

Comparative performance of several of these selected compounds

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from each of the several classes of compounds (halogen, quaternary ammonium and phenolic compounds) are summarized in Tables II, III and IV. These compounds are believed to be the outstanding ones in each category.

The results summarized in Table II indicate that chloromelamine (Halogen II) and iodine formulation (Halogen IV) will give zero counts in about two minutes at a concentration of 2,000 ppm available halogen, in the presence of five per cent peptone. These tests were carried out within five to ten minutes after the addition of peptone and consequently do not show the effect of aging of the solution on its bactericidal activity. Other studies indicate that the stability of these compounds in solution is far too poor for the use of disinfecting contents of field latrine buckets.

The data shown in Table III indicate that alkyl dimethylbenzyl ammonium chloride (Quat A) is adversely affected by 5.0 percent peptone. However, the presence of 1.0 percent of a suitable detergent mixture (containing a nonionic detergent and sodium tripolyphosphate) materially overcomes this deleterious effect of the peptone.

The addition of 0.75 percent linseed oil soap interferes with the bactericidal action of the quaternary to such an extent that zero counts are not obtained even after 15 minutes exposure time at a concentration of 1,000 ppm of the quaternary.

The purpose of adding soap to the disinfectant mixture was to stimulate possible use of the disinfectant with soap as a disinfectant-cleaner combination when used as a general purpose disinfectant.

Similar, but slightly poorer, results were obtained with di-isobutyl - phenoxy - ethoxy - ethyl - dimethyl-benzyl ammonium chloride (Quat B). Previous experience with a number of quaternaries indicates that alkyl (C_8H_{17} to $C_{18}H_{37}$) dimethyl benzyl ammonium chloride is one of the best quaternaries available with respect to water hardness tolerance and bactericidal spectrum.

Unquestionably several of the questionaries have very excellent germicidal properties and are useful germicides, however, their use as a combined latrine bucket

Table II. Bacteriological Tests on Active-Halogen Compounds

Halogen** Formulation	pH of test solution	Percent concentration of formulation	PPM available halogen in solution	Plate counts* after exposure time shown (in minutes)			
				2.5	5	10	15
I. In 5% peptone solution	8.0-8.3	1	300	10000	10000	8000	5000
		0.5	150	10000	10000	10000	8000
		0.2	60	10000	10000	10000	8000
		0.1	30	10000	10000	10000	10000
II. In 5% peptone solution	3.0-3.5	1	2000	0	0	0	0
		0.5	1000	3000	11	0	0
		0.2	400	10000	10000	4000	1500
		0.1	200	10000	10000	10000	10000
				Plate counts after exposure time in minutes			
				2	4	6	8
III. Alone		4.0	2000	0	0	0	0
		2.0	1000	0	0	0	0
		1.0	500	0	0	0	0
		0.4	200	0	0	0	0
III. In 5% peptone solution	6.4-7.0	4.0	2000	10000	10000	10000	10000
		2.0	1000	10000	10000	10000	10000
		1.0	500	10000	10000	10000	10000
		0.4	200	10000	10000	10000	10000
IV. Alone		0.7	2000	0	0	0	0
		0.35	1000	0	0	0	0
		0.17	500	0	0	0	0
		0.07	200	0	0	0	0
IV. In 5% peptone solution	6.0-6.5	0.7	2000	0	0	0	0
		0.35	1000	250	500	300	150
		0.17	500	10000	10000	10000	10000
		0.07	200	10000	10000	10000	10000

Conditions of experiment: 1. Med. Temp. 20°C. 2. Organism *E. coli* (ATCC #26). 3. Inoculum: 1 ml 24 hr. broth culture 10 ml medication. 4. Organic matter: 5% peptone.

*A plate count of 1000 is equivalent to about 99.9% kill; a plate count of 100 equivalent to 99.99% kill etc.

**Formulations

Halogen I	Azochloramid — Buffer sale mixture	60%
	Alkyl aryl sulfonate 40% active	40%
Halogen II	Chlormelamine (chlorination product 1,3,5 triamino triazine)	21%
	Sodium dodecyl benzene sulfonate 85% active	12%
	Citric acid	53%
	Sodium dihydrogen phosphate (NaH_2PO_4)	14%
Halogen III	Iodine resublimed U.S.P.	5%
	Nonionic detergent (an alkyl aryl polyethylene glycol ether	5%
	Urea	90%
Halogen IV	Iodine resublimed	28.5%
	Potassium iodide	71.5%

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Table III. Bacteriological Tests on Selected Quaternary Ammonium Compounds

Test Material	PPM of Quat in solution	pH of test solution	Plate counts[1] after exposure time (minutes) shown			
			2	4	6	8
Quat A[2]	200	7	0	0	0	0
	100		0	0	0	0
	50		2	2	1	0
	25		2410	350	94	43
Quat A plus 5% peptone[3]	5000	7	0	0	0	0
	2000		0	0	0	0
	1000		196	4	0	0
	500	10	10000	3000	350	33
Quat A plus 1% detergent[4] salts. No peptone	2000	10.0-10.2	0	0	0	0
	1000		0	0	0	0
	500		0	0	0	0
	200		0	0	0	0
Quat A plus 1% detergent salts + 5% peptone	2000	8-9	0	0	0	0
	1000		0	0	0	0
	500		0	0	0	0
	200(?)		400	572	6	1
			5	**10**	**15**	
Quart A plus 1% detergent salts + 0.75% linseed oil soap	1000		8000	4000	290	
	500		10000	5000	525	
	250		10000	5000	950	
Quat B[5] formulation alone	1500	10.0-12.2	0	0	0	0
	750		7	0	0	0
	300		25	4	0	0
	150		78	4	0	0
Quat B formulation plus 5% peptone	1500	8.7-7.6	2	0	0	0
	750		3000	2000	1200	500
	300		10000	10000	10000	10000
	150		10000	10000	10000	10000

Conditions of test — (same as in Table II): 1. A plate count of 1000 is equivalent to 99.9% kill; a plate count of 100 equivalent to 99.99% reduction etc. 2. Quat A is an alkyl dimethyl benzyl ammonium chloride wherein the alkyl group is C_8-C_{18} (principally C_{12}). 3. Peptone is Bacto Peptone from Difco Co., Detroit. Peptone was added to give final concentrations of 5%. 4. Detergent Salt: A mixture of compatible nonionic wetting agent and inorganic detergent salts of the following proportions: light ash 40 parts, sodium tripolyphosphate 30 parts, sodium bicarbonate 10 parts, sodium chloride 10 parts, nonionic detergent (an alkyl aryl polyethylene glycol ether) 5 parts. The quaternary solution and the detergent salt solution were mixed to give the desired concentration of each. 5. Quat B is a mixture of 15 parts di-isobutyl-phenoxy-ethoxy-ethyldimethyl-benzyl-ammonium-chloride-monohydrate, 5 parts of an alkyl aryl polyethylene glycol ether, 30 parts sodium tripolyphosphate, 40 parts light ash and 10 parts sodium bicarbonate.

and general purpose disinfectant is limited for several reasons. Quaternary ammonium compounds as a whole show varying abilities to tolerate hardness. There are

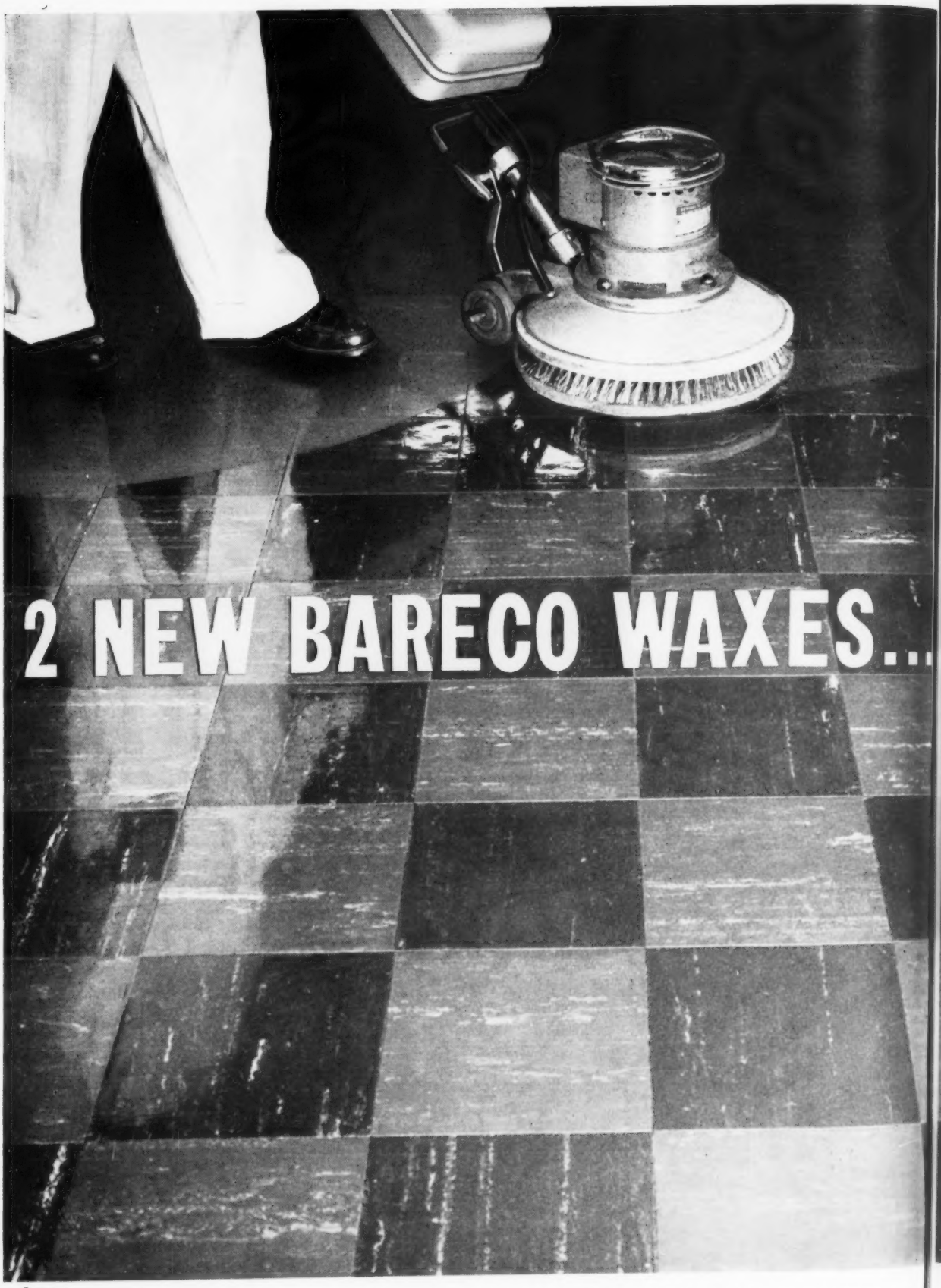
(*Turn to Page* 257)

Table IV. Effect of pH on the Bactericidal Activity of Substituted Phenols

Plate counts after times (in minutes) shown below

pH	ppm Phenol	Sodium chloro-o-phenyl phenate 2 min	4 min	6 min	8 min	Sodium 2-chloro-4-phenyl phenate 2 min	4 min	6 min	8 min	Sodium o-benzyl-o-chlorophenate 2 min	4 min	6 min	8 min
5.02	2000	0	0	0	0	27	2	1	0	0	0	0	0
	1000	0	0	0	0	68	6	5	0	0	0	0	0
	500	0	0	0	0	108	48	20	11	0	0	0	0
	200	9	0	0	0	1180	204	113	69	8	0	0	0
7.0	2000	0	0	0	0	1200	166	25	10	0	0	0	0
	1000	0	0	0	0	2800	460	141	43	0	0	0	0
	500	0	0	0	0	3100	1200	212	88	0	7	0	0
	200	3	0	0	0	4500	2800	664	332	1	15	0	0
9.0	2000	0	0	0	0	0	0	0	0	0	0	0	0
	1000	0	0	0	0	0	0	0	0	0	0	0	0
	500	0	0	0	0	0	0	0	0	0	0	0	0
	200	0	0	0	0	5400	2900	2100	1700	0	0	0	0
11.0	2000	0	0	0	0	331	6	0	0	0	0	0	0
	1000	1500	4	0	0	3000	1800	222	110	0	0	0	0
	500	4000	2000	2000	800	6500	3000	2800	2600	0	0	0	0
	200	6000	4000	3000	2500	104	5500	4000	2800	4000	1200	148	2

The pH of the sodium phenolate solution was adjusted with normal NaOH and H_3PO_4. McIlvane's Buffer was used for stabilizing the pH. Medication temp 20°C. Organism: E. coli (Atcc #26). Inoculum: 1.0 ml 24 hr culture/10 ml medication Organic matter: 5% peptone.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Aerosols Vs. House Flies

Tests of aerosols against native strains of house flies add further evidence that a more realistic view must be taken.

By John H. Fales and O. F. Bodenstein,*
Entomological Research Division,
Agricultural Research Service,
U. S. Dept. of Agriculture,
Beltsville, Md.

THE procedure for evaluating insecticides for household use against flying insects is based on tests with laboratory strains of house flies (*Musca domestica L.*) that had not acquired resistance to insecticides. The increasing prevalence of resistant insects found in nature prompted some workers to evaluate insecticides in a more realistic light. Schroeder and Jones (1957) found that household aerosols containing chlorinated hydrocarbon insecticides performed poorly against resistant house flies, whereas synergized pyrethrum formulas were as effective against these flies as against nonresistant, laboratory-reared insects. Bruce (1957) showed that certain acetone solutions of synergized pyrethrum applied topically were effective against resistant house flies.

During the summer of 1957 experiments were conducted at Beltsville, Md., with various aerosols developed by tests against nonresistant laboratory-reared insects to determine their effectiveness against strains of house flies collected in nature.

General Procedures

Three cultures of house flies were established in the laboratory from field-collected insects. One strain was obtained in June at a dairy barn at the Agricultural Research Center at Beltsville, another was obtained in July from the G. C. Fry dairy farm in Redland about 20 miles west of Beltsville, and the third in August in a bakery in Philadelphia.

The insects were reared by the Peet-Grady method, and the tests were made by the CSMA method for flying insects (1957). All tests were conducted in Peet-Grady chambers. No attempt was made to maintain the level of resistance of the new strains.

The formulas of the aerosols tested were as follows:

OTA

	per cent
Pyrethrins	0.4
DDT	2
Methylated naphthalene	6
Petroleum distillates	6.6
Propellants 11 and 12 (1:1)	85

*R. K. Burall and R. C. McDuffie participated in this work.

Table 1—Results of dosage-mortality tests with the Official Test Aerosol against native house flies. (Three tests except Philadelphia strain, two tests)

Beltsville					Redland					Philadelphia				
	% Knockdown in—			%		% Knockdown in—			%		% Knockdown in—			%
Dosage (g./1000 cu. ft.)	5 minutes	10 minutes	15 minutes	Kill in 1 day	Dosage (g./1000 cu. ft.)	5 minutes	10 minutes	15 minutes	Kill in 1 day	Dosage (g./1000 cu. ft.)	5 minutes	10 minutes	15 minutes	Kill in 1 day
3.01	6	11	25	8	2.93	9	17	25	4	2.89	15	30	31	54
5.88	26	43	45	16	5.46	9	26	35	11	5.56	17	32	37	52
11.02	30	47	56	32	11.34	33	47	65	36	12.04	43	57	58	71
22.22	61	71	82	62	22.22	49	66	82	54	21.07	50	68	74	80
44.07	58	78	87	70	44.44	50	62	86	74	43.06	71	78	82	91
	NAIDM 1948					NAIDM 1948					NAIDM 1948			
2.64	4	14	19	66	2.70	12	27	41	83	2.78	18	44	42	79
5.79	33	48	57	89	5.65	28	46	60	86	5.09	33	48	59	88

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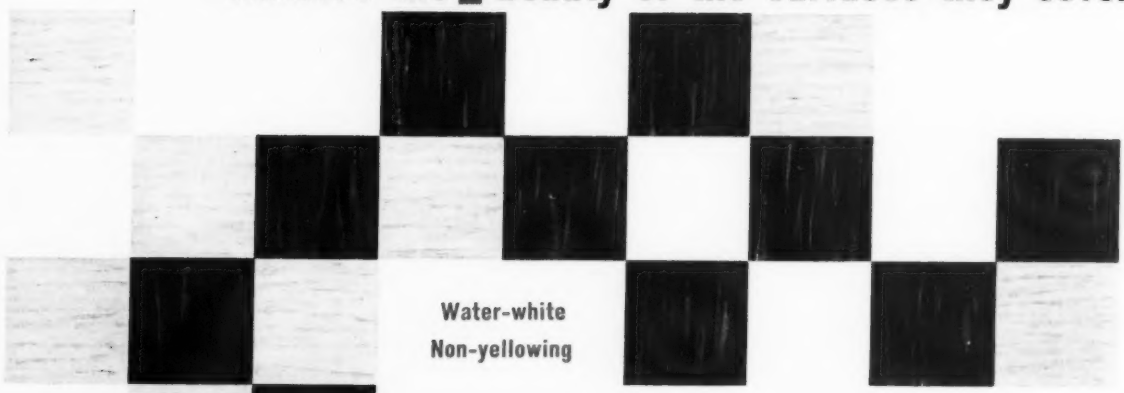

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Epolene E is an emulsifiable, low-molecular weight polyethylene wax. It is carefully manufactured under a precise system of quality control to assure a consistently superior product. As a result, polish manufacturers can standardize formulations with assurance of batch-to-batch uniformity.

Epolene is also available with the same high quality characteristics in a non-emulsifiable form—Epolene N—for use in paste polishes.

The facilities and staff of Eastman's technical service laboratory are available to manufacturers interested in Epolene's particular advantages in polish formulations. For more information and samples, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

Epolene
EASTMAN POLYETHYLENE WAXES

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; St. Louis; Houston. **West Coast: Wilson Meyer Co.**, San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

G-1209

	per cent
Pyrethrins	0.2
Piperonyl butoxide	1
Petroleum distillate	18.8
Methylene chloride	40
Propellant 12	40

G-1210

	per cent
Pyrethrins	0.2
Piperonyl butoxide	0.7
MGK-264	0.4
Petroleum distillates	18.7
Propellants 11 and 12 (1:1)	80

G-1211

	per cent
Pyrethrins	0.15
Sulfoxide	1.2
Methylated naphthalene	1
Petroleum distillate	12.65
Propellants 11 and 12 (1:1)	85

G-1213

	per cent
Pyrethrins	0.5
MGK-264	2
Petroleum distillate	12.5
Propellants 11 and 12 (1:1)	85

G-1227

	per cent
Pyrethrins	2
Petroleum distillate	13
Propellants 11 and 12 (1:1)	85

Dosage-Mortality Study

The Official Test Aerosol (OTA) was used in a dosage-mortality study with each of the strains in comparison with the normal NAIDM 1948 strain.

Five dosages of the OTA ranging from three to 44 grams per 1000 cubic feet, were used in these tests. The insects were in the F_2 and F_3 generations of the Beltsville strain, F_1 of the Redland strain, and F_3 of the Philadelphia strain.

The mortality figures given in table 1 show that the Beltsville and Redland strains were many times more resistant than the NAIDM strain. The knockdown figures indicate no resistance at the initial dosage but some resistance at the next dosage level. The Philadelphia strain was somewhat more resistant in mortality and knockdown than the NAIDM strain, but was not as resistant as the Beltsville and Redland strains. The lower dosage used with the NAIDM strain usually causes 80 per cent kill.

Tests with four synergized pyrethrum aerosols: Four aerosols containing pyrethrum plus one or more synergists were tested against two of the native strains as well as the highly resistant, laboratory-reared Orlando-Beltsville strain and the normal CSMA 1951 strain.

The results of these tests are shown in table 2. Against the normal CSMA 1951 strain all the formulations were more effective than the OTA in knockdown but only G-1211 approached it in kill. Against the native and laboratory-resistant strains all the synergized aerosols with the exception of G-1213 were more effective in kill

(*Turn to Page* 121)

Table 2—Effectiveness of several synergized pyrethrum aerosols against different strains of house flies.

Aerosol	Dosage (g./1000 cu. ft.)	% Knockdown in— 5 minutes	10 minutes	15 minutes	% Kill in 1 day
		Normal CSMA 1951 (5 tests)			
G-1209	3.54	40	68	80	72
G-1210	3.38	34	59	73	62
G-1211	3.43	40	66	83	79
G-1213	3.45	40	61	71	31
OTA	3.46	28	49	59	85
		Orlando-Beltsville Laboratory-Resistant (2 tests)			
G-1209	3.46	0	4	9	17
G-1210	3.82	0	0	0	12
G-1211	3.70	0	1	14	32
G-1213	3.47	0	1	4	6
OTA	3.47	0	1	1	4
		Native Beltsville (3 tests)			
G-1209	3.01	27	48	70	56
G-1210	3.01	25	43	64	53
G-1211	3.01	16	43	63	53
G-1213	2.93	18	37	51	8
OTA	3.13	14	28	39	20
		Native Redland (3 tests)			
G-1209	3.24	29	57	70	52
G-1210	3.09	21	42	54	34
G-1211	2.93	18	41	53	31
G-1213	2.86	21	35	38	8
OTA	3.01	28	49	51	13

Table 3—Results of dosage-mortality tests with the pyrethrum aerosol G-1227 against native house flies (2 tests).

Beltsville					Redland					Philadelphia				
Dosage (g./1000 cu. ft.)	% Knockdown in— 5 minutes	10 minutes	15 minutes	% Kill in 1 day	Dosage (g./1000 cu. ft.)	% Knockdown in— 5 minutes	10 minutes	15 minutes	% Kill in 1 day	Dosage (g./1000 cu. ft.)	% Knockdown in— 5 minutes	10 minutes	15 minutes	% Kill in 1 day
2.22	58	84	88	52	2.55	54	76	87	66	2.43	47	78	78	54
5.19	76	88	92	77	4.54	68	80	88	74	5.09	42	62	76	64
9.17	85	92	96	88	9.35	81	92	96	90	9.17	53	74	84	74
19.68	83	88	94	86	17.59	88	94	96	92	19.68	72	78	86	86
		OTA					OTA					OTA		
3.59	36	52	70	44	3.02	26	47	65	70	2.78	7	22	38	60

NOW GIVE POSITIVE 3-WAY ACTION

WITH THIS DETERGENT-SANITIZER TEAM → BTC 824 | Neutronyx 600

NOW YOU CAN OFFER a superior detergent-sanitizer deodorant by incorporating Onyx' BTC 824 germicide and Neutronyx 600 detergent in your formulations.

Completely proven in exhaustive field tests, this winning team cleans, deodorizes, and provides positive microbiological control . . . all simultaneously!

BTC 824 is Onyx' high-potent, versatile germicide that has given outstanding performance in many formulations for several years.

NEUTRONYX 600 is a stable, highly efficient, and compatible detergent that rounds out this ideal combination.

Many applications now exist for this multi-purpose product . . . in hospitals and other public institutions, restaurants, and wherever cleaning, deodorizing, and microbiological control should be accomplished in an easy one-step operation.

Write now for field-tested, compatible formulations based on BTC 824 and Neutronyx 600.

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ONYX CHEMICALS

Onyx Oil & Chemical Company / Jersey City 2, New Jersey

WAX FACTS

NEWS OF INTEREST TO WAX USERS—
DEVELOPMENTS IN THE FIELD OF SYNTHETICS

In Dry-Bright Floor Polishes!

Special Issue—$12/58

THE 1960 PRODUCTS—YOURS TODAY

By Irwin Y. Straus

Today's trend in dry-bright floor polishes presents an interesting challenge. Wanted are products which combine the durability of waxes with the brilliancy and depth of plastic floor dressings. Consumers, both in the industrial maintenance and household fields, are demanding floor polishes which dry to a high gloss and still look good after months of traffic. They want no discoloration of popular white and grey floors. They demand water resistance and easy removability.

How far have we advanced technologically to meet these demands? Can hardness be brought into harmony with buffability? Can water-repellency be combined with removability? Can non-discoloration be achieved at sensible costs? Surveying the market the answer would seem to be "No."

Now, however, the all-new formulations with DUROXON® hard-wax make every conventional wax and resinous polymer product obsolete. At last, you can give your floor-polish customer what he has wanted for years:

1. Deep, Brilliant Gloss on Drying; Glass-Clear Film.
2. No Brown Spots; No Discoloration of White Floors.
3. Hard-Wearing Surface; Resistant against Flaking, Powdering, Heelmarking.
4. Full-Spectrum Maintainability by Buffing, Steel-Wooling, Damp-Mopping.

Yes, but what about product appearance, water-resistance, removability, leveling, oven-stability, freeze-thaw? Here are the answers from a leading laboratory which has exhaustively tested the new Duroxon polishes:

TEST REPORT BY INDEPENDENT LABORATORY

TEST PERFORMED:	RESULTS WITH DUROXON FLOOR POLISH 18% SOLIDS:
Product Appearance	White, translucent.
Water Resistance	Excellent within 4 hours
Removability	Complete, 75 strokes
Leveling on Asphalt, Rubber, Linoleum and Vinyl tile	Excellent
Oven Stability, 125°F	OK minimum 30 days
Freeze-Thaw Stability	OK three cycles

Formula Cost? Way lower than using conventional, dark-colored vegetable wax! Lower than most resinous polymer products!

Your telegram, call or letter will bring you up to date on Duroxon Emulsion Technology. The Dura Commodities Laboratory will gladly assist you in formulating your individualized product.

DUROXON® waxes are sold exclusively by Dura Commodities Corp., New York.
Western United States: Braun Chemical Co., Los Angeles—Phoenix—Albuquerque
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New England States: Roger A. Reed, Inc.—Medford, Mass.
South-Eastern States: Triangle Chemical Company, Atlanta, Ga.
Canada: Davies, Irwin, Limited, Montreal—Toronto
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Pressurize Your Sales...

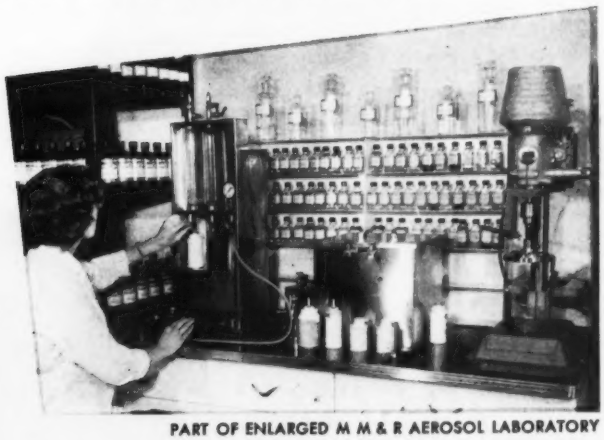
with MM&R Fragrances

Let MM&R put a powerful urge to buy in your aerosols. MM&R perfume oils overcome even the heaviest odors of basic chemicals and impart a refreshing, sales-stimulating fragrance to your products, at low cost.

New MM&R perfume oils are being created constantly to keep abreast with rapid advancements in the aerosol field and to meet the special requirements of our customers.

MM&R's cumulative knowledge and experience, gained during more than sixty-three years in the development of perfume oils — over fifteen in connection with aerosols — are at your service in increasing the salability of your products.

Write now for complete information.



PART OF ENLARGED M M & R AEROSOL LABORATORY

MAGNUS, MABEE & REYNARD, INC.

The World's Most Famous Supplier of Essential Oils. Concentrated Flavors and Basic Perfume Oils

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Table 4—Summary of tests with the Official Test Aerosol and Insecticide (spray) against successive generations of native house flies.

Strain and generation		Number of tests	Dosage (per 1000 cu. ft.)	% Knockdown in— 5 minutes	10 minutes	15 minutes	% Kill in 1 day
			Aerosol				
Beltsville	F2	7	3.17 grams	20	37	46	17
	F3	3	3.00	3	11	27	12
	F6	3	2.93	17	30	31	27
	F7	2	3.59	36	52	70	44
Redland	F1	8	3.03	22	38	41	9
	F4	3	2.77	25	37	34	4
	F5	3	3.10	20	35	42	8
	F6	2	3.01	26	47	65	70
Philadelphia	F3	5	2.87	11	20	21	41
	F4	3	3.06	6	16	17	36
	F5	2	2.78	7	22	38	60
NAIDM 1948		26	2.96	18	35	45	80
			Insecticide (Spray)				
Beltsville	F2	3	55.6 ml	82	96	—	33
Redland	F1	3	55.6	73	93	—	13
NAIDM 1948		7	55.6	88	95	—	35

than the OTA. Against the highly resistant laboratory-reared Orlando-Beltsville strain all these aerosols were less effective, causing low knockdown and kill. Against the native Beltsville strain all four formulas caused higher knockdown than the OTA. Against the Redland strain G-1210 and G-1211 were less effective than G-1209 in both knockdown and kill, but they were superior to G-1213 and the OTA in kill.

Tests with a pyrethrum aerosol: The three native strains were then tested at several dosages with an aerosol containing pyrethrum without a synergist (G-1227). The Beltsville strain was in the F_7, the Redland strain the F_6, and the Philadelphia strain the F_5 generation. The results obtained in these tests when compared with the OTA are shown in table 3. When compared with the results in table 1, the data show that these strains had begun to lose their resistance.

Tests of OTA and OTI against successive generations of flies: Table 4 gives the results of all the tests with the OTA at dosages approximately three grams per 1000 cubic feet against several generations of flies, and also those of a few tests with the OTI spray (pyrethrins 1 mg./ml.). It is indicated that native strains of house flies brought into the laboratory lose some resistance by the F_5 or F_6 generation. These insects were apparently slightly resistant to pyrethrum as well as to DDT.

Conclusions

These experiments add further evidence that a more realistic view of controlling house flies with aerosols must be taken. The recent marketing of preparations that do not depend on a chlorinated hydrocarbon as the main killing agent is a start in the right direction. It is certain that the level of active ingredients or the dosage will have to be increased. More study is needed to improve the efficiency of formulas. Native strains from many different areas should be studied. They should be watched carefully for loss in resistance after being established in the laboratory. The relative susceptibility of the sexes of the native strains of house flies needs further study. Murray and Caler (1938) reported that, unlike laboratory-reared flies, native flies show little difference between the sexes in susceptibility to insecticides.

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Floor Absorbents Tests

Oil absorptive characteristics of floor absorbents are under study by Committee C-23 on Sorptive Mineral Materials, American Society for Testing Materials. A program calling for five replicate determinations on three coded products, using five recognized test procedures is expected to yield information on which an ASTM standard method will eventually be based.

The committee, organized in 1957, expects to develop methods on sampling and sieve analysis, determination of free moisture, bulk density, absorptive properties, dust content, resistance to breakdown (oil, water, mechanical), slipperiness, ease of removal and other properties. Selection of work projects was guided by a survey of consumer practices. The group met in Detroit Oct. 16 and 17.

Persons or organizations interested in the committee's work are invited to write to its secretary: R. L. Shirley, The Eagle-Picher Co., Installation Div., 900 American Building, Cincinnati 1.

—★—

Carbide Office Moves

The Atlanta district office of Union Carbide Chemicals Co., division of Union Carbide Corp., New York, was recently moved to 1371 Peachtree St., N. E., Atlanta 9, Ga. New telephone number of the office is Trinity 3-2241.

Everyone takes a shine to Dow Corning Silicones...

COURTESY MIDLAND SILICONES, LTD.

Your assurance for repeat sales . . . profits

Make sure of customer satisfaction . . . formulate your polishes with Dow Corning silicone fluids. These high quality silicones make polishes take a shine in minimum time, and with minimum effort. The superior spreading and wetting characteristics of Dow Corning fluids always result in smooth, easy film formation. Your polishes produce the finest, deepest gloss . . . provide truly durable protection, whether they're formulated for furniture, appliances, glass or autos.

And remember — not only do Dow Corning Silicones give your products *superior quality*, but you also benefit from the *prestige and appeal* that Dow Corning Silicones have acquired in virtually every industry. For samples, literature, technical service contact any of our branches or write Dept. 2512.

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MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS DETROIT LOS ANGELES NEW YORK WASHINGTON, D. C.

Salesmen were routed from their beds early on morning contest opened by telephoned bugle Post call. Fully outfitted bugler above performs during Mr. Wood's talk at C.M.C.S. meeting.

Anatomy of a Sales Contest

By Geoffrey H. Wood*,
President,
G. H. Wood & Co.,
Toronto, Canada

SALES campaigns that do not create a favorable impact on everyone in the company and, of course, on customers, too, are usually just about as effective as "slamming a swinging door."

We have just completed our 1958 sales campaign which was an outstanding success mainly because everyone in our national organization participated.

Yes, every man and girl in our offices, laboratories, factories and warehouses, take part in our sales campaigns . . . and they love it.

We built this year's campaign around the somewhat sporting title of "Wood's Grand National Sales Derby." The sales race was at a distance of nine furlongs or nine weeks and was split into nine individual furlong or weekly sprints, plus, of course, the big Grand National Nine Week Sales Race itself.

Substantial cash awards were made to the stables whose salesmen came in first, second or third in each of the nine weekly sprints.

The big Wood's Grand National Sales Derby Race itself was for the president's purse of 20 gold Sovereigns, plus $3,000 added.

Salesmen were divided into nineteen different stables each headed by a jockey who was in reality the division or local branch manager. Colorful names for both the stables and their mythical race horses were chosen by the participants. Salesmen in each stable were assigned a carefully checked sales quota for each of the nine weeks of the sales campaign. Then each stable was selling against the gross total sales for all of their salesmen.

Realizing that perhaps certain stables or sales teams could have one or two terrific, above-quota weeks and so get an almost insurmountable head start in the big race, which might cause the others to lose interest . . . we wrote into the rules a plan that while any stable could win a furlong or weekly sprint by any amount over quota, they could "carry forward" only a pre-determined maximum amount of participation in the big Grand National nine week race itself. This assured a very close race and exciting, spectacular finishes in the final stretch run.

To illustrate this—one stable won three firsts, two seconds and one third in the weekly sprints

*Based on a talk given before first annual meeting, Canadian Manufacturers of Chemical Specialties, Montreal, Nov. 14, 1958.

Painted billboard erected outside main offices of G. H. Wood in Toronto dramatically tells story of sales contest.

SULFOXIDE

means added power and profit

for your product

Sulfoxide, the active synergist, steps up your insecticide ten-fold. This means more profit because lower concentrations can be used. It gives your insecticide *new* life, *new* effectiveness—thus produces a better kill.

Sulfoxide is safe, non-irritating . . . with a pleasant odor. Highly compatible, it mixes well with general household, agricultural and industrial insecticides.

We will be happy to provide you with a generous working sample and data on starting formulations.

PENICK

Agricultural Chemical and Insecticide Division

S. B. PENICK & COMPANY 50 CHURCH ST., NEW YORK 8 · 735 W. DIVISION ST., CHICAGO 10

yet only came in fourth in the big nine week race. Another had one first, three seconds and four thirds and came in sixth in the big race. The Grand Champion, Mac Mac-Auley's "Golden Daze" stable, maintained a steady pace throughout the nine weeks having only two firsts, one second and two thirds in the furlong sprints and yet won the big race by five lengths. Incidentally, we figured a thousand dollars to equal one length.

All of our non-sales staff were termed "racing fans" and they were invited to pick the winning stables of each individual furlong and to mail in their forecasts prior to certain specified dates to compete for interesting cash prizes. We even had a "double" in which these "racing fans" were requested to pick the winners of the sixth and ninth furlongs or the sixth and ninth weeks and, incidentally, no one successfully picked both winners so the cash was divided among those who picked the winners of half the double.

WINNER'S CIRCLE: G. H. Wood, president of G. H. Wood & Co., fourth from left, awards "The President's Purse" of 25 Gold Sovereigns to winning "stable." "Jockey" MacAuley, in silks on Mr. W's left, and members of winning "stable" hold up their added winnings of $1,500 in silver dollars.

Two of the race forecast cards used during the contest are shown below. These cards were for use by other than sales personnel, the idea being to get everyone in the Wood company interested in the contest.

RACE FORECAST CARD

FOR USE ONLY BY THE RECIPIENT — WHOSE NAME APPEARS ON REVERSE SIDE OF THIS CARD AND WHO IS A MEMBER OF G. H. WOOD'S PERSONNEL (EXCLUDING SALESMEN IN STABLES, JOCKEYS AND RACING OFFICIALS.)

IMPORTANT

I AGREE TO ABIDE BY THE DECISIONS OF THE RACING STEWARDS AND I CERTIFY THAT THERE WAS ABSOLUTELY NO CHARGE WHATSOEVER MADE TO ME FOR ENTERING THIS FORECAST CARD TO "PICK THE WINNER."

FOR A CASH PRIZE OF $90.00

I PICK HORSE IN POST POSITION No. ____

"TO WIN" THE 9TH FURLONG SPRINT

WEEK OF JUNE 23rd — 28th
IN THE
Wood's GRAND NATIONAL SALES DERBY

SIGNATURE _____ BRANCH _____

TO BE ELIGIBLE

THIS CARD MUST BE MAILED TO RACING HEADQUARTERS - TORONTO - AND POST-MARKED NO LATER THAN **JUNE 24th**

USE THE PRE-ADDRESSED ENVELOPE ATTACHED

RACE FORECAST CARD

FOR USE ONLY BY THE RECIPIENT — WHOSE NAME APPEARS ON REVERSE SIDE OF THIS CARD AND WHO IS A MEMBER OF G. H. WOOD'S PERSONNEL (EXCLUDING SALESMEN IN STABLES, JOCKEYS AND RACING OFFICIALS.)

IMPORTANT

I AGREE TO ABIDE BY THE DECISIONS OF THE RACING STEWARDS AND I CERTIFY THAT THERE WAS ABSOLUTELY NO CHARGE WHATSOEVER MADE TO ME FOR ENTERING THIS FORECAST CARD TO "PICK THE WINNER."

FOR A PRIZE OF $150 SILVER DOLLARS

I PICK "TO WIN" IN THE FURLONG DOUBLE

HORSE POST POSITION No. ____ **TO WIN IN THE 6TH FURLONG**

HORSE POST POSITION No. ____ **TO WIN IN THE 9TH FURLONG**

FOR THE WEEKS OF JUNE 2-7 AND JUNE 23-28

Wood's GRAND NATIONAL SALES DERBY

SIGNATURE _____ BRANCH _____

TO BE ELIGIBLE

THIS CARD MUST BE MAILED TO RACING HEADQUARTERS - TORONTO - AND POST-MARKED NO LATER THAN **JUNE 3rd**

USE THE PRE-ADDRESSED ENVELOPE ATTACHED

To add a touch of humor we invited the salesmen and their jockeys to participate in a "Lastella" in which they had to pick the horse that would run last in the ninth furlong or ninth week. There was only one winning forecast in this instance, which possibly was a good thing.

All of our salesmen were provided with gold-plated lapel buttons each of which we packed in an individual jewel box. This proved to be a splendid idea. Each button contained a well-designed good-looking embossed horse's head. You can well imagine the curiosity that this created when our salesmen called on prospects and customers, most of whom wanted to know what it was all about. Naturally our salesmen were only too happy to tell the story of the sales campaign—usually with quite satisfactory results.

Every day we sent out "racey" messages to the competing salesmen and also to the "racing fans." Some of these took the form of bulletins, others humourous cartoons, all designed to "prod" the men continually on to maximum

(*Turn to Page* 229)

. . . Not a Worry in the World! . . .

. . . when you specify

Certified SHELLAC

Refined Wax Free Shellac

Originally and Consistently used in

QUALITY NO RUB FLOOR POLISHES

Call, Write, or Wire Collect for
FREE WORKING SAMPLES
and price data

BRADSHAW-PRAEGER & CO.

3248 West 47th Place

Chicago 32, Illinois

LAfayette 3-2050

Certified Shellac Assures Uniform Results

- Longer shelf life
- Greater scuff resistance
- Higher gloss
- Better leveling
- Faster solubility

"The development of most aerosol products requires an organization with a sound theoretical and practical background in all phases of chemstry, plus a thorough knowledge of pertinent economic and regulatory standards."
Precision Valve Corp. photograph

Aerosol Formulation

THE aerosol package is generally regarded as a simple adaptation of a common product to conform with our modern "push-button" style of living. To the uninitiated or average consumer, this may be a natural conclusion. Unfortunately, this is far from being true, as potential aerosol marketers rapidly discover.

The development of most aerosol products requires an organization with a sound theoretical and practical background in all phases of chemistry, along with a thorough knowledge of pertinent economic and regulatory standards. Also, a good understanding of commercial loading methods and plain ordinary common sense can by no means be omitted. In other words, it is essential that the potential marketer be well versed in the technical and marketing principles of aerosols.

Basic Formulation Systems

One of the first considerations in an aerosol product development project is the choice of propellant type. It is the propellant which decides many of the major characteristics of the final aerosol product. In Figure I, the basic types of aerosol formulation systems are related to the various types of propellants.

Liquefied and non-liquefied gases are the two major propellant classifications. Both types have certain advantages and limitations, and in almost all cases they will not give an aerosol product with similar characterists.

The non-liquefied propellants may be further broken down into two sub-classifications, those which are essentially insoluble in the active product and those which have definite though fairly low solubilities. The insoluble gases are suitable for dispensing paste ribbons, and liquid streams or drops, with such products as tooth-

By Grant L. Armstrong*,
Technical Service Representative,
"Freon" Fluorinated Products,
Du Pont Company of Canada (1956), Ltd.

*Paper presented during first annual meeting, Association of Canadian Manufacturers of Chemical Specialties, Montreal, Nov. 14, 1958.

What's YOUR LINE?

Want to give it more sell? Make Roccal your "QUAT"

It's just good salesmanship to put the best ingredient names behind the good name of your product. That's why you'll give more sell to your formulation if you specify ROCCAL as your quaternary ammonium germicide.

For ROCCAL is the original "quat" widely accepted by compound manufacturers as the "standard." ROCCAL is prepared like a fine pharmaceutical product, laboratory controlled in every step of its manufacture.

Triple checked to insure uniformity, potency and quality, ROCCAL can be depended upon for superior germicidal action. Often imitated . . . never duplicated . . . ROCCAL in proper dilutions is highly stable, odorless, colorless, non-poisonous, non-irritating to skin, non-corrosive.

ROCCAL Concentrates are available in special-lined, non-returnable metal pails and drums.

GENUINE
Roccal
Reg. U. S. Pat. Off. and Canada
BRAND
SANITIZING AGENT

WRITE, PHONE, WIRE
for full data, prices, samples

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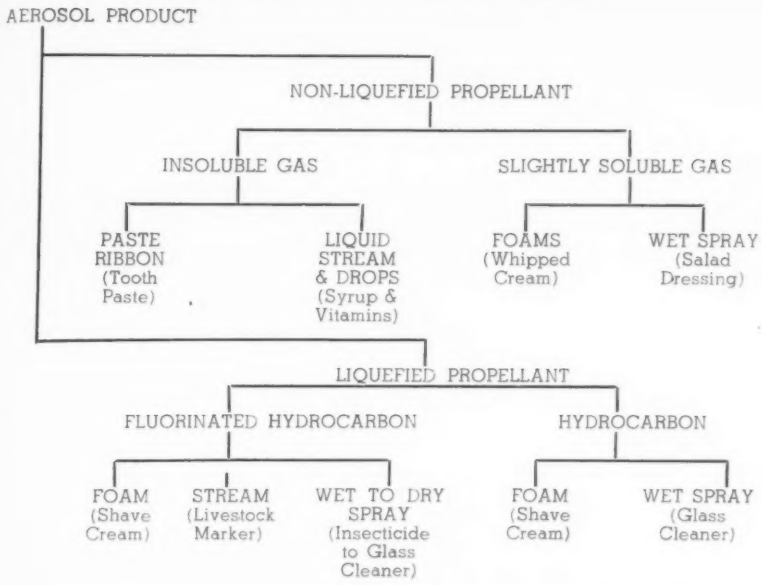
Figure I. Aerosol Formulation Systems



pastes, syrups, and vitamins. Nitrogen is the common propellant of this type, although in certain cases helium, argon, and krypton may prove to be advantageous. Since these propellants are essentially insoluble, no aeration occurs during the dispensing operation to change the physical characteristics of the active product. On the other hand, the slightly soluble gases, such as carbon dioxide and nitrous oxide, are suitable for use in certain products where some aeration is desired in order to produce wet foams or wet sprays. Typical products in this classification are whipped cream and salad dressing. With the aerosol valves presently available, it is impossible to produce highly atomized space type sprays or extremely stable foams having a fine bubble structure with any of the non-liquefied propellants.

The liquefied propellants also fall basically into two subclassifications, the hydrocarbon gases and the fluorinated hydrocarbon compounds. Other liquefied gases such as vinyl chloride are not ordinarily used as propellants on this continent, although chlorinated solvents such as methylene chloride and methyl chloroform, which act as vapor pressure depressants, are used for some products.

The hydrocarbon gases presently utilized as propellants are propane, normal butane and isobutane. They are very flammable compounds and under current shipping regulations only small amounts can be used in aerosol products. However, with non-flammable water based concentrates, foams and wet sprays can be produced. For spray products, specially designed mechanical break-up valves must be used to compensate for the low propellant compositions.

The fluorinated hydrocarbon propellants are non-flammable compounds and their use is not limited to water based products which result in foams or wet sprays. With these propellants, wet to dry sprays, liquid streams, and foams of varying stability and texture can be readily produced. Common propellants of this type are trichloromonofluoromethane, dichlorodifluoromethane, and dichlorotetrafluoromethane, which under the Du Pont trademark system are referred to as "Freon-11," "Freon-12," and "Freon-114," respectively. In a very limited number of products trichlorotrifluoroethane, "Freon-113," and monochlorodifluoromethane, "Freon-22," are also used as aerosol propellants.

Unfortunately, it is not within the scope of this paper to discuss the formulation of aerosol products with all types of available propellants. So, from this point on, only fluorinated hydrocarbon propellant systems will be considered.

Fluorinated Hydrocarbons

A good knowledge of the physical and chemical properties of the propellants is of prime importance to the product formulator. In Figure II, some of the basic properties of the three common fluorinated hydrocarbon propellants have been summarized.

The "Freon" propellants are

Figure II. Common Fluorinated Hydrocarbon Propellants

	"Freon-11"	"Freon-12"	"Freon-114"
Formula	CCl_3F	CCl_2F_2	$CClF_2$-$CClF_2$
Molecular Weight	137.4	120.9	170.9
Boiling Point (°F)	74.8	—21.6	38.4
Pressure at 70°F (p.s.i.g.)	—1.3	70.2	12.9
Liquid Density at 70°F (gms/c.c.)	1.485	1.325	1.468
Liquid Viscosity at 86°F (Centipoise)	0.405	0.251	0.356
Hydrolysis Rate with Steel (gms/liter/year)	19.0	0.8	1.4
Flammability	Nonflammable	Nonflammable	Nonflammable
Toxicity	5A	6	6
K. B. Number	60.1	18.0	11.8
Solubility in Water at 1 Atm. and 77°F (Wt. %)	0.11	0.028	0.013
Solubility of Water at 86°F (Wt. %)	0.013	0.012	0.011

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all halogenated derivatives of the hydrocarbon gases, and it is this replacement of hydrogen atoms by chlorine and especially fluorine atoms that gives them their unique characteristics. They are all stable, non-flammable, essentially non-toxic, and non-corrosive to common fabrication materials. Their hydrolysis rates are exceptionally low, much lower than the rates of nonfluorinated halogen derivatives of hydrocarbon gases. Of the three compounds, only "Freon-11" is not recommended for use in water based aerosol products, but for certain emulsion systems even this compound, which is much less stable than "Freon-12" and "Freon-114," can be suitable for use with water based products. With respect to inhalation toxicity, it might be mentioned that all three have been found less toxic than carbon dioxide which we are continuously exhaling out of our lungs.

The vapor pressures of the three propellants at normal temperatures are fairly low which allow them to be used in low pressure containers. By the use of various solvents and "Freon-11" or "Freon-114" with "Freon-12," the range from 0 to 70 p.s.i.g. at 70°F can readily be attained. And unlike a non-liquefied propellant where the pressure in the container drops as the product is discharged, the "Freon" propellants provide an essentially constant pressure throughout the complete product usage life. A liquefied propellant not only provides the "push" that forces the product out of the container, but also creates considerable atomization of a spray product at the discharge point due to propellant flashing.

The "Freon" propellants have low viscosities but fairly high densities. Their low viscosities assist in producing sprays with relatively viscous materials. Their high densities can be very valuable in the formulation of stable powder dispersion products, as we will see later on.

The "Freon" propellants are soluble in, and are solvents for, a wide variety of organic compounds. Most common organic solvents are miscible with them in all proportions. Compounds with similar chemical structure, such as the hydrocarbons and halogenated compounds, are usually completely miscible with the "Freon" propellants over a wide range of temperatures. Highly polar solvents such as the glycols and water have very low solubilities. The individual propellants differ considerably in their solvent properties depending upon their molecular weight and the number of chlorine atoms in the molecule compared with the number of fluorine atoms. In general, compounds with lower molecular weights or lower ratios of fluorine to chlorine atoms in the molecule have better solubility properties. The addition of hydrogen atoms tends to increase the propellant solubility toward polar compounds like water and glycols. Thus, if "Freon-113" and "Freon-22" are included, the following order of decreasing solubility power is usually observed: "Freon-11" > "Freon-113" > "Freon-22" > "Freon-12" > "Freon-114". The kauri-butanol values also can be a reasonably reliable index and reveal the same relative solubility positions. Although a great deal of general solubility data is available for the "Freon" propellants, it is found that in many cases for multi-component liquid mixtures specific solubility data must be determined experimentally.

Formulation Systems

Formulation systems can be generally subdivided according to the type of discharge, as sprays, streams, and foams.

A. *Spray Systems:* At least four distinctive types of sprayable system can be used by the product formulator with fluorinated hydrocarbon propellants. The aerosol product formulation may be completely miscible, contain a dispersed solid, have two separate liquid layers, or be in the form of an emulsion.

(1) *Soluble Types:* With the most common type of aerosol formulation, the liquid propellant and product are completely miscible. Insecticides, room deodorants, hair sprays, colognes, and many others are well known products of this type. In many cases, the active components are not completely soluble in the propellants alone, but require the use of auxiliary solvents like the alcohols, ketones, esters, petroleum distillates, and chlorinated solvents. Due to the extremely low miscibility of water with the "Freon" propellants, water based products cannot be formulated on this basis. Solubility relationships are an important aspect to consider in this type of aerosol product. However, within the solubility limitations, spray products with greatly varying discharge characteristics can be prepared. By either increasing the total amount of propellant or the ratio of low to high boiling propellants, drier and more highly atomized sprays can be produced, and vice versa. In some cases, however, these changes do not produce similar discharge characteristics, especially where the sprays are directed on targets rather than into the air as space type sprays. With such surface sprays, increasing the ratio of high boiling propellant may result in target foaming, bubbling, running, or excessive coolness. Valve drooling, sometimes encountered with viscous products, may also be enhanced by increasing the proportion of high boiling propellants. On the other hand, either increasing the ratio of low to high boiling propellants or increasing the total amount of propellant may result in solubility problems for such products as paints. Thus, in many cases, considerable study of the solubility properties of the proposed formulation is necessary before an economically feasible product suitable for commercial loading and usage, within the regulatory limitations presently in force, can be developed.

(2) *Dispersion Types:* Aerosol products of this type are often

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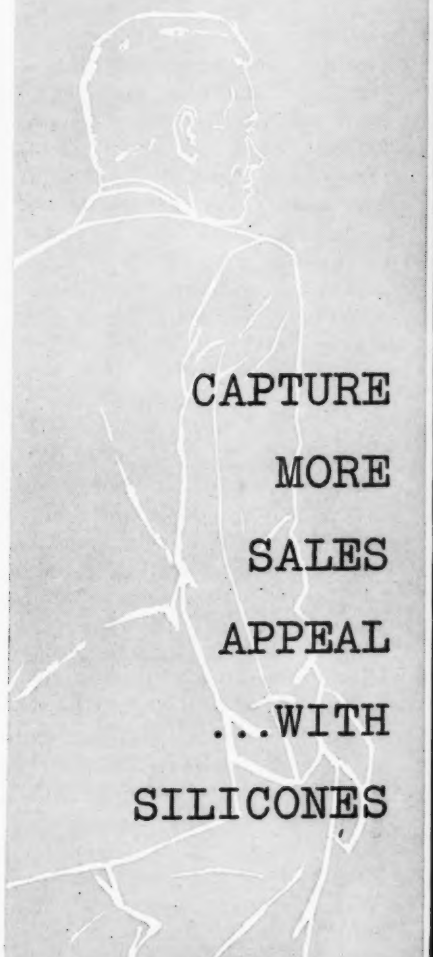

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more difficult to prepare than completely miscible formulations, but in some cases due to the nature of the active components other formulation alternatives cannot be used. A good knowledge of surface chemistry can be extremely valuable to the aerosol formulator when dealing with dispersion systems.

One of the first aspects to consider is the size of the solid particles. Usually, the particles should be no larger than 40 to 50 microns and it is preferable that the majority of the particles be 10 microns or less in diameter. With the solid ground to a suitably fine powder, the next major problem is to prepare a stable aerosol formulation which will not result in any agglomeration over the estimated total life of the product.

There are several general methods which may aid in preventing powder agglomeration. One which is often useful in such systems involves adjusting the densities of the powder and dispersion mediums to approximately the same value. By the use of various solvents and combinations of the high density propellants, this may be fairly easy to do. This balancing of densities decreases manyfold the rate of settling or creaming of the solid particles, as the case may be. Naturally, there are limitations to such density adjustments because the final formulation must have a suitable amount and type of propellant mixture to produce the desired spray characteristics.

Another tool in the preparation of stable dispersion systems involves the use of agents which inhibit powder agglomeration. Such agents are believed to act either by forming a colloid coating on the particle or by attaching themselves in such an orderly fashion that all the powder particles either become slightly electropositive or electronegative in nature and thus repel each other. Usually, the chemical composition of the powder will assist in choosing appropriate suspending agents. However, even with the aid of such knowledge, it is found that dispersion agents can be very specific in their action. With some insoluble powders, stearyl alcohol can be effective, and in a few cases, other fatty alcohols and relatively short chain surface active agents of low foaming power are useful. It has also been reported that isopropyl myristate can be beneficial. For solids having definite solubilities in the dispersing medium, the lower alcohols such as isopropanol may be quite effective in preventing the formation of large crystals. In such cases, the solid must usually be first completely dissolved in the hot suspending medium and the inhibitor added to the solution before cooling takes place. Waxes can often be suspended satisfactorily by this method in hydrocarbon solvents.

The choice of valve is extremely important when dealing with dispersion systems. The powder particles tend to collect in the valve mechanism. This may result in either cloggage or improper closure. None of the valves presently available is known to be completely free of this problem. However, we have found from our own experience that certain valves are much better than others. Hard crystalline powders are more prone to this type of valve problem than are soft amorphous powders like talc.

Even though the powder dispersion can be satisfactorily dispensed from an aerosol package, there still remains the problem of providing the required concentration of powder on the target without excessive lossage due to blow-off. In many cases, this problem can be solved by the use of small amounts of an innocuous high boiling liquid to keep the powder temporarily wet and sticky. For example, with talcum powder, the addition of a fraction of a percent of a mineral oil aids in preventing powder blow-off without resulting in a permanently wet or oily feel on the target.

(To be concluded)

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Henry Schachte, advertising vice-president of Lever Brothers Co., New York, was elected recently as chairman of the board of the Association of National Advertisers. He succeeds Ralph Winslow, vice-president of Koppers Co.

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C.M.C.S. Meeting

(*From Page* 103)

layed for at least a year, the entry of the three-piece can. This also explained why his company went into the manufacture of aerosol valves.

At that time metal was the only material that would meet the requirements for aerosol containers. Later, of course, came aluminum for one to six ounce can sizes; coated glass for ½ to 4 ounce sizes, and Nylon plastic containers for sizes up to 4 ounces.

The emphasis on the size, style and shape of the container must be considered in products for milady's boudoir, Mr. Demsey said.

In discussing propellants Mr. Demsey said that loaders are looking for a new propellant for foods. Liquid propellants have been approved for inhalation by human beings, but have not received clearance for ingestion. Mr. Demsey referred to a new liquid propellant that is now available and holds promise for use in foods. He did not elaborate on this statement. He did predict that food aerosol sales would be big.

More recent research has contradicted findings published in an earlier paper on sterilization of aerosol food products, Mr. Demsey said. Although he did not give the name of the paper to which he was referring, a paper, "Microbiological Aspects of Pressure Packaged Foods" by G. L. Hays and D. W. Riester of American Can Co., was presented before the 44th midyear meeting of the Chemical Specialties Manufacturers Assn. in Cincinnati, May 20, last year. The paper was published in the September issue of *Soap & Chemical Specialties.*

Several liquid heavy-duty detergents that have appeared on the market within the past year or so are showing slow but steady growth, Dr. Richard B. Wearn of Colgate-Palmolive Co., Jersey City,

Dr. E. G. Klarmann

N. J., told the Soaps & Detergents group meeting Nov. 13. He pointed out, however, that the "fastest growing group of products are the light-duty detergents, particularly the liquid dishwashing detergents." He reported that although the total market for light-duty detergents is probably less than 25 per cent of the total packaged market, its growth is entirely due to liquid detergents which now comprise more than twice the volume which they held several years ago."

Trends in packaging were discussed at this same session by Ernest Orr, president of Orr Associates, Ltd., Toronto.

In discussing "Hospital Infection and Environmental Disinfection" during the forum on Disinfectants and Sanitizers, Nov. 14, Dr. E. G. Klarmann pointed out the importance of hospitals receiving "the correct type of products

Dr. Richard B. Wearn

required for their special germicidal needs." Dr. Klarmann is vice-president and manager of technical services of Lehn & Fink Products Corp., New York.

He explained that "the problem of hospital infection in general, and of staphylococcal sepsis in particular reaches into several areas of hospital activity, including medical, surgical housekeeping and nursing. All of these activities should be subjected to a searching bactaeriological scrutiny in order to eliminate the risk of their serving as disseminators of bacterial contamination, either personal or environmental."

The full text of Dr. Klarmann's paper will be published in a future issue of *Soap & Chemical Specialties.*

A highlight of the Waxes and Floor Finishes Forum, Nov. 14, was a comprehensive review of the background of Fischer Tropsch waxes by Charles T. O'Connor. Slides showing the SASOL F-T plant in South Africa were shown by Mr. O'Connor.

A summary of how polymer latices can be used to impart long wearing qualities to floor polishes was contained in a paper by Lloyd H. Perry, Roland M. Avery, Jr., and Richard H. Cahill, Jr. of UBS Chemical Corp., Cambridge. In the paper, read by Mr. Perry, a matrix theory was described.

"Modern Marketing in the Soaps and Detergents Industry," a presentation by R. P. Breadon, director of advertising for Procter & Gamble Co., Ltd., Toronto, contained an explanation of how P&G is organized to market its products. The complete text of this paper will appear in a future issue of *Soap & Chemical Specialties.*

The final feature of the meeting was a discussion of how his company put on the most successful sales campaign in its history. Geoffrey H. Wood, president of G. H. Wood Co., Toronto, made the presentation. His talk appears in full beginning on page 123 of this issue.

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lized by soap.

b. More active at low soap concentrations and at the C.M.C.

c. Relatively more activated by soap below the C.M.C.

d. Relatively more inactivated by soap above the C.M.C. The increased solubilization and inactivation are in line with the general theory and with other experimental results.

Mechanism of Activation

Activation of germicides by surfactants apparently is not directly related to micelle formation, although the results of Berry, Cook, and Wills would seem to indicate some parallels. The mechanism of activation must remain in some doubt, since our knowledge of the action of phenols is not what it might be. The findings of the last few years do give some help.

According to early reports by Baker, Harrison, and Miller (36, 37), surfactants which kill bacteria depress metabolism. Others have showed inhibition of acid and carbon dioxide production (38), of enzymes (39, 55), of glucose oxidation (40), and of the cytochrome system (41). On the other hand Hotchkiss (42) pointed out that surfactants caused leakage of nitrogen and phosphorus compounds from bacterial cells. He suggested that surfactants might kill by destroying the semipermeability of the cell membrane. This sort of leakage has been shown for other substances (43, 44, 45). Salton, Gilby, and Few have shown that surfactants do attack the cell membrane (57, 58). This question may now have been resolved by reports showing that the cell membrane contains most of the succinic, lactic, malic, alpha-keto-glutaric, and formic dehydrogenases; most of the cell lipid, and most of the cytochrome system (46-50). Thus damage to the membrane could produce both metabolic and osmotic effects (56). A report by Tomcsik (53) shows that there is some similarity between the actions of phenols and detergents on the cell membrane. The synergism observed may be due to combined attack on the membrane, possibly involving formation of a mixed surfactant-phenol layer on the cell.

SOLUBILIZATION IN POTASSIUM LAURATE

PHENOL	SOLUBILITY IN WATER	SOLUBILITY IN 0.1 M SOAP	RELATIVE SOLUBILIZATION
4-BENZYL PHENOL	0.00089 M	0.04 M	45
O-PHENYL PHENOL	0.0042 M	0.065 M	16
PHENOL	0.87	--	--

Source: Berry, Cook, and Wills; J. Pharm. Pharmacol. 8 425 (1956)

Figure 7

There seem to be no reasons why the conclusions with respect to solubilization and inactivation could not be extended to other systems; this seems generally true where there is evidence. Synergism has been reported for some mercurials with synthetic surfactants below the critical micelle concentration, while "Tween 80" inhibits at one per cent. Presumably the water-soluble germicides should not be affected. This has been found with the hypochlorites (30).

In summary, then, consideration of surfactant micelles as a separate phase can largely explain the observed results of solubilization when excess germicide is present and of inactivation when the amount of germicide is limited. Synergism may involve combined attack on the cell membrane.

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Figure 8

PHENOL	MEAN DEATH TIME (MINUTES) A IN 0.01 M SOAP	B AT CMC	C IN 0.4-0.5 M SOAP	RELATIVE ACTIVATION A/B	RELATIVE INACTIVATION C/B
4-BENZYL PHENOL (0.00163 M)	31	1.5	25	20	17
O-PHENYL PHENOL (0.00141 M)	80	5	25	16	5
PHENOL (0.016 M)	100	15	25	6	2

Source: Berry, Cook, and Wills; J. Pharm. Pharmacol. 8 425 (1956)

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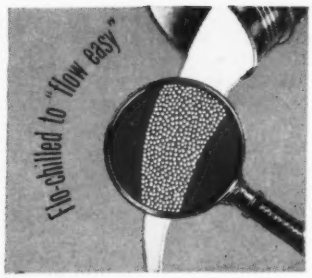

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★

Shulton Sales Up

Net sales of Shulton, Inc., Clifton, N. J., increased for the first nine months of this year to $23,805,908 from $22,011,592 for the same period in 1957. Net income declined from $2,522,529, or $2.06 a share, last year, to $2,265,831, or $1.85 a share, in 1958.

★

Drew Names Sales Rep.

Walter J. Romaine recently was appointed sales representative for the textile chemical department of E. F. Drew & Co., New York.

Formerly with Shawinigan Resins Corp., Mr. Romaine services the firm's accounts in the New England area.

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Cosmetic Chemists Meet in New York City

HERMAN Jerome Amsterdam of van Ameringen-Haebler, Inc., was chosen president-elect to head the Society of Cosmetic Chemists in 1960, at the group's 14th annual meeting, Nov. 20 at the Statler-Hilton Hotel, New York, which featured also a technical program of seven papers. Savery F. Coneybear of Colgate-Palmolive Co. will head the society as its president in 1959. No special medal award was given this year because the award committee was unable to agree on a suitable candidate.

Herman J. Amsterdam

The new president-elect is director of cosmetic research and development for van Ameringen-Haebler, which he joined in 1944. Previously he had been on the faculty of Columbia University College of Pharmacy for 18 years. Mr. Amsterdam has been active in the Society of Cosmetic Chemists since its inception.

Lester I. Conrad, executive vice-president and technical director of American Cholesterol Products, Inc., Edison, N. J., becomes treasurer, replacing Walter A. Taylor of Chesebrough-Pond's Inc., who had asked to be relieved of this office. Robert A. Kramer, vice-president of Evans Research and Development Corp., secretary of the society since 1951, was re-elected to the office. Newly elected to the board of directors was Stillman R. Goff, research director with Toni Co., Chicago.

The all-day technical program included a paper on "High Density Polyethylene Bottles," by E. J. Temple of Plax Corp., Hartford, Conn. Liquid detergents, shampoos and other specialties can be safely and economically packaged in these containers. Tracing the history of the polyethylene bottle, Mr. Temple said that the squeeze bottle had been on the market about ten years. Its range of application was at first limited by its permeability, which was later mitigated by the emergence of lining techniques. Commercial production of high density polyethylene constitutes another milestone in the development of this form of packaging. Permeation is greatest through the amorphous parts of polyethylene containers. Since crystallization is greater in high density material permeation is reduced. The speaker presented test results covering shampoos, insect

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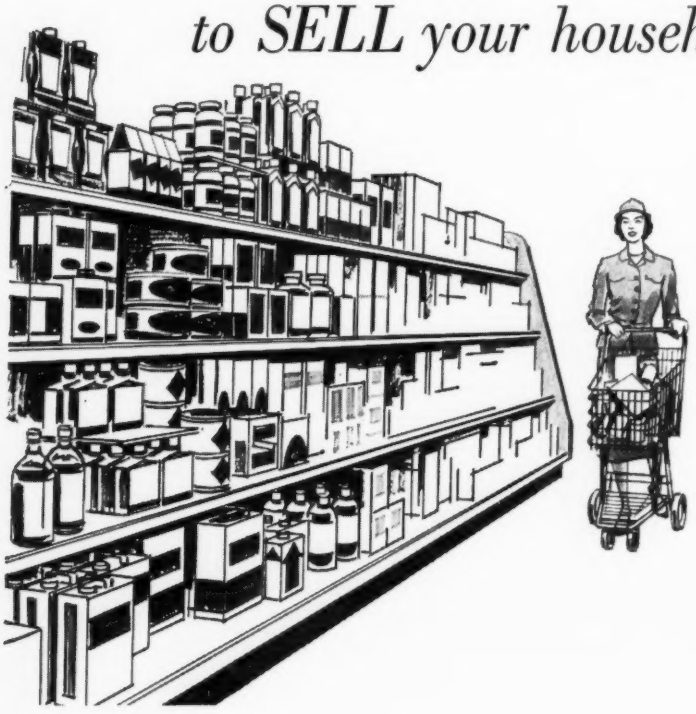

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repellents and other specialties, showing the high density bottles to be satisfactory in this respect.

Rigidity of high density material eliminates some closure problems experienced with the softer type bottles. These were described demonstrating the impact resistance of the newer type material, which also has less tendency to collapse. High temperature resistance permits autoclaving of empty high density containers.

Spray bottles of high density polyethylene can be made, provided certain precautions are observed regarding their shape and other engineering aspects. Increased rigidity makes lighter bottle weights feasible and these in turn make for a more economical package.

A paper on the usefulness of "Carbopol 934" water-soluble polymer in the compounding of permanent suspensions of fine particles by L. Cohen and R. J. Meyer of B. F. Goodrich Chemical Co., Avon Lake, O., was presented under the title: "The Rheology of Natural and Synthetic Hydrophilic Polymer Solutions as Related to Suspending Ability." Solutions of "Carbopol 934" were compared with those of other synthetic and some natural polymers for their permanent suspending ability at low concentrations. This ability was found to be closely related to the physical measurement of yield value as obtained with the Brookfield viscometer. Results with "Carbopol 934" exhibited highest yield value at low concentrations.

Other presentations included: "Aromatic Fluorine Compounds," by G. C. Finger, Section of Fluorine Chemistry, Illinois State Geological Survey, Urbana; "Hair-Coloring—Modern Formulation Considerations," by Robert L. Goldemberg, Shulton, Inc., Clifton, N. J.; "The Therapeutic Potentialities of Triglycerides," by S. G. Knight, associate professor of bacteriology, University of Wisconsin, Madison; "Fluid Mixing of Cosmetic Formulations," by James

(*Turn to Page* 249)

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Color, APHA, max.	20
Water, by Wt., max.	0.8%
Distill. Range	156°C–177°C
Below 161°C, max.	10%
Above 168°C, max.	5%
Odor	Characteristic
Non-volatile Matter by Weight, max.	0.005%

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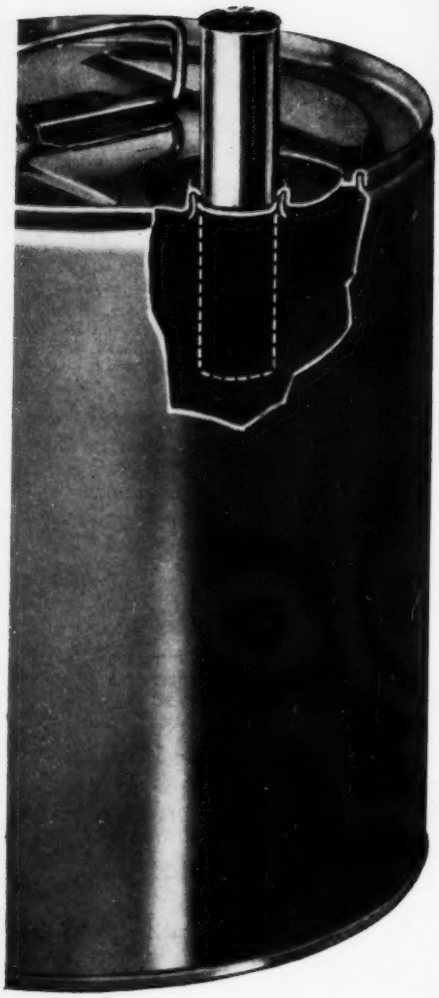

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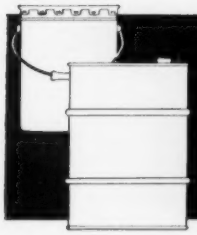

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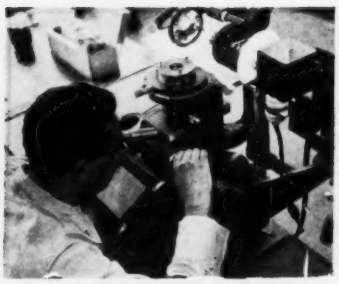

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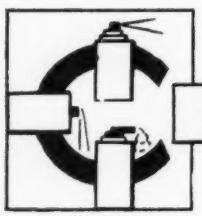

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Danville, Illinois

An observer operator watches aerosol valves pouring from an assembly unit at Precision Valve Corp. plant, Yonkers, N. Y.

AEROSOL VALVES...

By Joseph C. Pizzurro*

Technical Director,
Precision Valve Corp.
Yonkers, N. Y.

IT has been aptly demonstrated that a valve cannot be employed indiscriminately to dispense pressurized products, and must have modifications in construction materials and design.

The dispensing characteristics required for various products, and the nature of the products themselves, would often necessitate such modifications.

Contemporary low pressure aerosol valves differ greatly from the high and low pressure valves sold in the early days of pressure packages. The first and only aerosols were insecticides packaged with the high pressure propellant "Freon 12" in a container capable of withstanding the much higher pressures of elevated temperatures. At that time, valve manufacturers primarily had one problem: to design and construct a valve suitable for spraying a homogeneous mixture of insecticide concentrate and propellant. It is common knowledge that although only one type product had been presented for dispensing under pressure, a certain amount of trouble was encountered to the lack of research and previous experience in designing and constructing aerosol spray valves.

With the advent of low pressure aerosols in 1947, the principle of pressurized dispensing became feasible for many products, although insecticides were still the chief aerosol product. Consequently valve manufacturers made only slight modifications in the high pressure aerosol valves for adaptation to low pressure aerosols. However, about a year later, it became quite evident that major changes in aerosol valves would be necessary before other products could be packaged successfully. Attack on valve parts by products such as hair lacquers, shave creams, deodorants and anti-perspirants necessitated changes in materials of construction from metals to plastics such as Nylon. Spray patterns and particle size requirements brought about variations in button orifice sizes and shapes. Changes in elastomeric materials were required be-

*Paper presented before the first annual meeting of the Association of Canadian Manufacturers of Chemical Specialties, Montreal, Nov. 14, 1958.

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cause some products used solvents which caused either excessive swelling or shrinkage of the rubber parts. Shave creams, hand creams, shampoos, etc., which at that time called for the formation of a foam, required the designing of revolutionary actuators. Ease of operation, appearance and function were all factors in the design of these dispensing heads. Three phase and low propellant content aerosols led to the development of mechanical breakup valves and actuators.

When compressed gases began to be employed as aerosol propellants it became possible to pressurize products such as dental creams, stream dispensed hair preparations, cosmetic creams, foods, pharmaceuticals and detergents. This development also brought about additional valve design changes and the search for more suitable materials of construction.

The past ten years of aerosols have demonstrated that there is not a universal aerosol valve suitable for all products, but along with the other components of the package the valve must be tailored to the formulation and its principle.

Cooperation Helped

Valve research has received a great assist from all parties concerned with the development and successful packaging of pressurized products. Many aerosol valve developments have been facilitated and expedited by modifications in formulations and packaging techniques without detriment to the end function of the product. The cooperation of can companies, contract packers, merchandisers, propellant manufacturers and valve manufacturers in the solving of past problems has made possible the present great variety of pressurized products for the consumer.

The question of how an aerosol manufacturer solves the problem of achieving the ideal valve for a product may best be answered by considering the following:

1. Selection of proper elastomers
2. Designing for specific delivery rates
3. Designing valves for glass bottles
4. Designing valves for three phase and low propellant content aerosols
5. Designing valves for dry powder sprays.

In many aerosol valves, the gasket is one of the most critical parts, if not the most important. Its compatibility with the product is the difference many times between a good or defective unit. The ideal elastomer is one which neither swells excessively nor shrinks when in contact with the product. Excessive swelling of the valve gasket results in loss of actuation stroke, leading eventually to an inoperable valve. Shrinkage is usually accompanied by a hardening of the gasket and loss of resiliency which often results in leakage because of consequent improper sealing. For many years valve manufacturers have investigated the effect of existing products on most available elastomers, and many have been found suitable for a particular class of solvents but highly unsuitable in the presence of other solvents. To date, Buna N and Neoprene are the most compatible with existing formulations. The search has always been for a universal elastomer; however, this ideal has not been realized and the search will continue for a completely satisfactory material.

Specific delivery rates have been stringent requirements for many products. Research in product effectiveness has indicated that different products require different delivery rates. As a matter of fact, rate of delivery has become such an important factor in most products that rival companies marketing identical products now often request different rates for their products depending on what their research departments feel is the most satisfactory. For example, the rates of delivery for space insecticides now vary from 0.08 grams per second to 1.20 grams per second at 70° Fahrenheit.

Quality control unit checks valve output at Precision Valve plant. Wide range of instruments are used by unit.

One may ask "how can the valve manufacturer cover this broad range of deliveries?". It has not been a simple task to be sure. Through long hours of research and development the valve manufacturer has been able to satisfy these requirements. There are three principal controlling orifices in the construction of most aerosol valves. These are the valve body orifice, the valve stem orifice and the valve button orifice. By combining different sizes for these three valve orifices, a broad range of deliveries can be covered. In addition, new manufacturing techniques have been developed, and more scientific means of inspection adopted, so that the valve manufacturer can assure his customer of constant and uniform performance.

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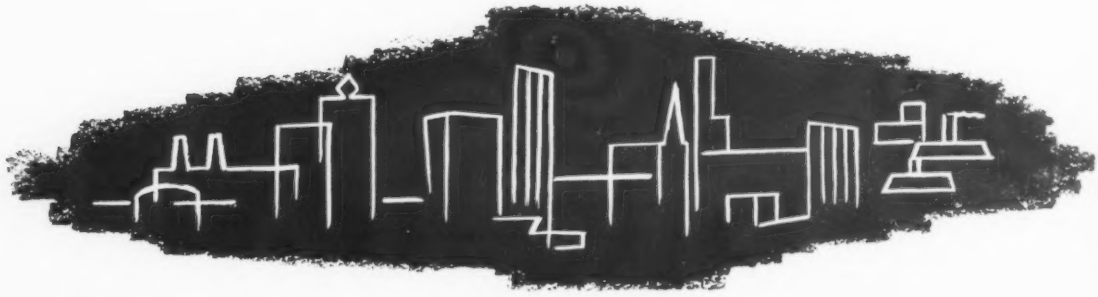

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•

TIN CANS

SEAMLESS & PIECED

CENTRAL CAN COMPANY 2415 W. 19th ST., CHICAGO 8, ILL.

aerosol glass packages was slow due to various reasons, one of which was valves. Eventually an entirely new container was presented to the aerosol industry for packaging consideration, but this package needed suitable valves before it could be marketed. The valve manufacturer was confronted with a package which necessitated an entirely different design from what had previously been used. The valve had to be affixed to the container by a method not common to the aerosol industry. This meant much research for the valve manufacturer to develop a suitable type ferrule which would hold the valve onto the bottle. The ferrule had to be manufactured to the dimensional specifications of the bottle, and a suitable material had to be selected to assure a tight and permanent seal onto the bottle.

Aluminum was the initial choice of most valve manufacturers as the logical metal of which to make the ferrule because of its ease of being sealed onto a bottle. Later one manufacturer developed a steel ferrule because of leakage experience. This leakage was attributed to aluminum fatigue which caused the seal of the valve onto the bottle to become loose.

The glass bottle had been advanced as a suitable package for products which could not be packaged in metal containers due to their attack on steel: hence, the valve manufacturer had to use materials of construction which were inert to these products. Most bottle valve parts are made of plastic and stainless steel which to date have been found very serviceable with most products. Although the basic material being used for the sealing ferrule may be attacked by the product, this does not become a factor since the design of most aerosol bottle valves is such that there is no internal contact of product and ferrule.

The possibility of exterior attack of the ferrule by the product has been eliminated by the use of appropriate coatings and finishes. Examples are the use of anodized aluminum and clear solvent-resistant lacquer over brass-plated steel. With these valve developments, along with developments by the container manufacturer, the aerosol bottle is coming into its own as a suitable aerosol package.

Several years ago a new era of pressure packaging began with the development of three phase and low propellant content aerosols. Where once the breakup of product into fine particles was achieved mainly by the propellant, now the valve was called upon to help achieve the desired breakup. This was especially true in three-phase aerosols where the concentrate is water based. Here the propellant phase is insoluble in the concentrate and acts strictly as a means to develop pressure for the dispensing of the active ingredients. Hence, on opening the valve, the material coming from the container is, strictly speaking, only product with no propellant admixed.

Using ordinary aerosol valves for this type product would produce a jet stream of liquid with no apparent breakup. The type spray pattern desired was a relatively fine mist as is obtained with a garden hose nozzle when it is in the almost closed position. The problem was solved by what is called a three phase actuator or mechanical breakup actuator. The principal function of these actuators is to dispense the ingredients

(*Turn to Page* 244)

Main aerosol valve assembly room in plant of Precision Valve Corp., Yonkers, N. Y. A battery of automatic assembly units appears in right side of photograph. Precision has machines that turn out over 600 valves per minute.

Famous
for Flint

Famous
for Blue

NOW

AMBER MARYLAND GLASS

Designing, creating and manufacturing glass packages that sell is nothing new for Maryland Glass. We've done it successfully for years. Famous Maryland Blue bottles and jars have stopped the eye . . . and started the sale for dozens of products; the quality designs and distinctive shapes that Maryland has created in crystal clear Flint Glass have long been a byword with men who recognize that a well dressed package is the best introduction for a quality product.

Now there is something NEW at Maryland Glass. The same imagination in design, the same service and experience are available to you in eye stopping AMBER GLASS.

If you have a design problem or a packaging need . . . IN BLUE, FLINT, OR AMBER get in touch with MARYLAND GLASS CORP., 2147-53 Wicomico St., Baltimore 30, Md.

Packaging NOTES

Metro Appoints Delaplane

R. E. Delaplane has joined Metro Glass Co., Jersey City, N. J., as general sales manager, it was announced in November by Jerry Moore, vice-president.

R. E. Delaplane

Previously with Owens-Illinois Glass Co., Toledo, O., for about 26 years, Mr. Delaplane was most recently sales manager of the beverage industries lines of the O-I glass container division.

—★—

New Continental Container

A new corrugated shipping container for bulk materials has been developed by the fibre drum and corrugated box division of Continental Can Co., New York.

Called the "Cargo Carrier," it features an inner corrugated tube with bellows corners at the major stress points which are said to practically eliminate bowing. The corners lock when the bellows scores are broken, creating two separate container compartments.

When being filled, the inner tube is fitted into a tray which serves as the package's primary bottom closure. After materials have been packed, the tube is covered by an outer case which is capped by another tray and closed at the bottom by a series of four flaps.

Complete details are available from the fibre drum and corrugated box division, 530 Fifth Ave., New York 36.

—★—

New Stem Casing Perfected

A new stem casing which pressure fills any type container without the use of a seal has been perfected by Karl Kiefer Machine Co., Cincinnati, manufacturers of precision liquid filling machinery.

Rapid action of a vacuum liquid level control instantly cuts off the flow of the liquid product when it reaches a pre-determined height, according to the company.

The unit may be used with plastic bottles, sanitary cans, regular and wide mouth bottles, and all types of jars.

—★—

O-I Advances O'Rourke

Emmett P. O'Rourke, has been named manager of the Chicago sales branch of the glass container division of Owens-Illinois, Toledo, O., it was announced recently by Sid F. Davis, vice-president and general sales manager. He succeeds Ebon C. Jones who has been advanced to western regional sales manager for the company.

With O-I since 1923, Mr. O'Rourke was formerly assistant manager of the Chicago branch office.

—★—

Hazel-Atlas Names Lange

Arthur F. Lange, Jr., has been appointed Chicago district sales manager for the Hazel Atlas glass division of Continental Can Co., New York. With the firm since 1930, Mr. Lange makes his headquarters at the division's Chicago offices.

He has been a member of the Chicago Perfumery and Soap Extraction Association, Inc., for many years and has served on its board of directors.

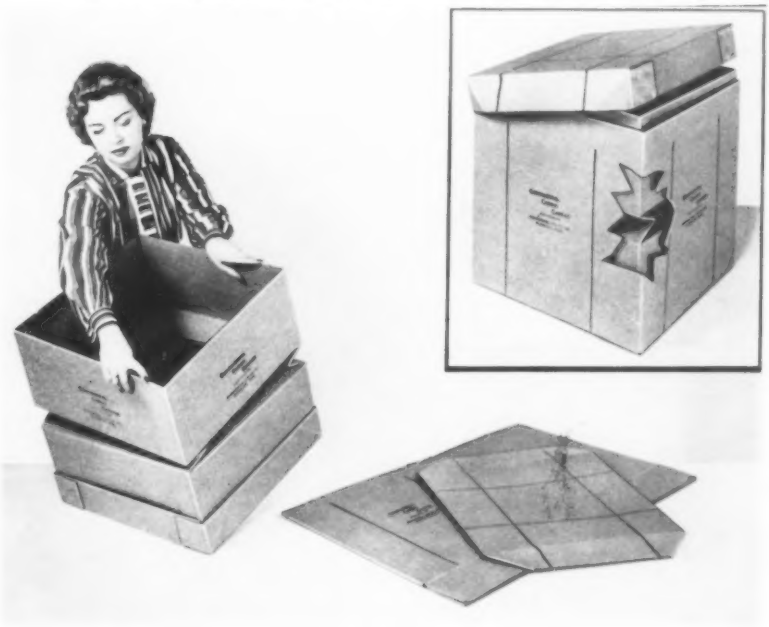
—★—

CCA Appoints Johnson

Hubert Johnson has been appointed purchasing agent for the domestic purchasing department of Container Corp. of America, Chicago, it was announced recently by Norman C. Myers, director of purchases.

Mr. Johnson joined the firm in 1954 after several years experience in the industrial equipment and materials handling field and was named assistant purchasing agent in 1956.

New Continental Can "Cargo Carrier" for shipping bulk materials.



PLASTIC COATED

Wheaton GLASS and COMPRESSED GAS

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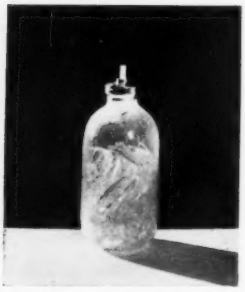


4

As a propellant, compressed gas is substantially different than the liquefied propellants normally used for aerosol containers. A lower potential energy factor safely permits a gassing pressure of 90 pounds. Your specific problems will be welcomed by our staff of technicians.

Shown left are actual photographs illustrating a typical sequence of breakage. (1) The bottle is dropped, (2) impact causes breakage, (3) the plastic expands and balloons to hold the released pressure, gradually venting the gases, and (4) returning to its original form. Only Wheaton containers will perform in this safe way.

Illustrated here is the break pattern of a bottle subjected to 500 pounds hydrostatic pressure. An adequate margin of safety is provided above the maximum recommended gassing pressure.

- *Plastic Coating*
- **improves pressure retention**
- **prevents weakening scratches**
- **adds resistance to breakage**
- **prevents flying particles on breakage**

WHEATON PLASTICS CO.

MILLVILLE, NEW JERSEY

Metal Can Prices to be Lower

CHANGES in its metal can pricing policies which will be reflected in lower can prices for most of its customers were announced Nov. 19 by American Can Co., New York. The new method of pricing was termed "drastic and far-reaching" by Canco president William C. Stolk, who made the announcement at a press conference in New York.

Instead of averaging can prices over broad geographic areas, Canco has established, effective Jan. 1, 1959, "a separate f.o.b. price at each of (its) plants for each type and style of can." Mr. Stolk said that his company will "hold the line" on price reductions until Oct. 1, 1959, "except for adjustments that may be necessary to reflect any increases the steel companies might make in their tin plate prices."

The new and lower Canco can prices "now will reflect to customers the freight cost advantages of their nearness to the steel mills," Mr. Stolk said.

Mr. Stolk pointed out that under the new method of pricing every can will be priced in more direct and closer relationship to the process and the differing costs of raw material and wages paid for labor involved in its manufacture.

American Can announced a new method of specific pricing of cans on Sept. 25. Under the previous practice, when there was a change in can prices, a single, average percentage figure was applied uniformly across the board to all types of cans. Now the company determines a separate price for each type and style of can.

The new pricing method announced by American Can is closely tied in with its $32 million expansion program to process tin plate from coils. Eight of Canco's plants throughout the U. S. now have coil processing centers which perform inspection, shearing and other operations previously carried out by steel mills. These eight plants will supply up to 85 per cent of Canco's plant needs. The latest coil processing facility, that at the Hillside, N. J., plant, has a capacity for processing 400 million pounds of plate annually. It will supply American Can container plants at Hillside, Hoboken and Jersey City, N. J., Brooklyn and Needham, Mass. The Hillside coil center was dedicated Nov. 5.

As a result of its investment of $32 million in coil processing facilities, American Can expects to save $9,000,000. This saving makes possible reduced can prices.

At a luncheon marking the formal dedication of the Hillside coil processing facilities, Mr. Stolk said the success of the project opens "The gateway to a new era of can manufacture—an era of new machines, processes, techniques and perhaps materials which not even the most visionary of us could have foreseen just a few years ago."

"Our coil processing program brings to can making a new dimension of efficiency that will result in more uniform and higher quality containers," he said. "We are currently chemically treating steel plate for the manufacture of tinless cans at our Hammond, Ind., coil center. The prospects are that it is only a matter of time before we have chemical treating lines feeding plate in continuous strip directly into inspection and shearing lines.

"The next step in our program will be to enamel tin plate in continuous strip—and then probably to have continuous lithography. The ultimate step will be to feed chemically treated, enameled or lithographed plate in coil form directly into the can making equipment without ever shearing it into plates."

Thomas C. Fogarty, president of Continental Can Co., New York, was elected a board member of the National Industrial Conference Board recently. Founded in 1916, the Conference Board is an independent and non-profit institution for business and industrial fact-finding through scientific research.

—★—

Johnson Heads Glass Group

Andrew L. Johnson has been named president and research director of the recently established Glass Container Industry Research Corp., New Castle, Pa., it was announced last month by Frank H. Wheaton, Jr., chairman of the board of trustees. Seventeen United States glass container manufacturers comprise the membership of GCIRC which was founded early this year with the objective of conducting research toward the development of a stronger and lighter glass container.

Dr. Johnson was director of research at the W. Keith McAfee laboratory of Universal-Rundle Corp. for the past ten years and has been associated with the Atomic Energy Commission and the National Bureau of Standards.

—★—

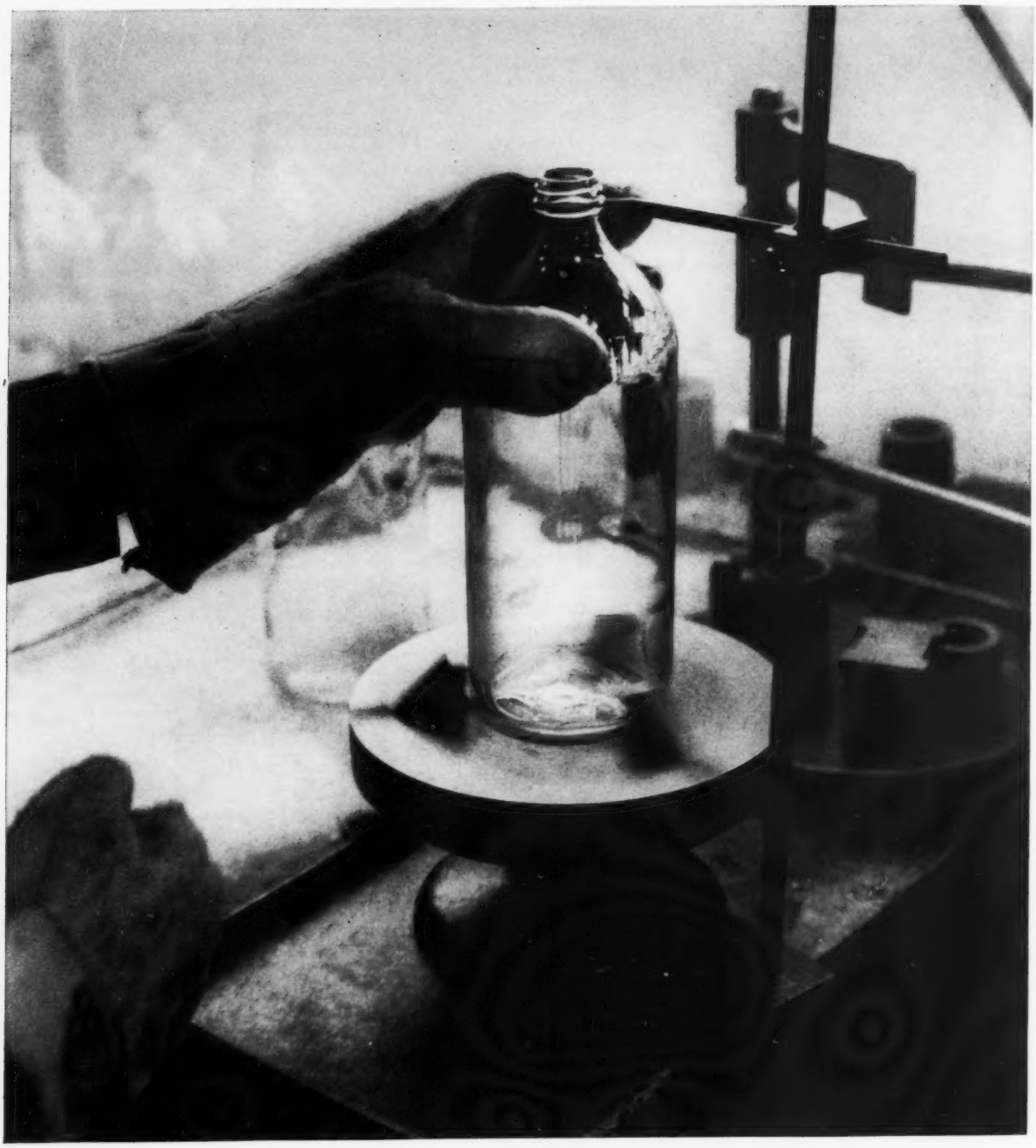
Plax Advances Three

Three sales and product management executives have been advanced by Plax Corp., Hartford, Conn., it was announced last month by the company.

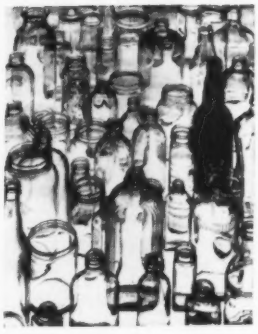
W. E. Garmon is sales manager, industrial and stock containers; C. N. Sprankle becomes product manager, sheet and formed containers; and John W. French was named product manager, film.

Mr. Gamron was formerly product manager, containers, and joined the company over five years ago as distributors sales manager. Previously he was associated with Union Bag and Paper Corp.

With Plax since 1952, Mr. Sprankle had been product manager, film and sheet, before his current appointment. For seven years prior to joining Plax he was vice-president, sales, for Sandee Manufacturing Co.



PRECISION IN GLASS means effective quality control measures. At the seven plants of Knox Glass, quality control is more than a routine procedure, it is a continuing crusade. Qualified Knox engineers and research teams are constantly studying, planning, and inventing new and better quality control methods. This assures Knox customers of the highest possible precision quality in any of Knox's complete line of glass containers. Find out how Knox can quickly, efficiently, meet your glass container needs. Contact:



KNOX GLASS INCORPORATED · KNOX, PENNSYLVANIA

New Spray Attachment

A new plastic spray attachment for dispensing liquid chemical specialties is now available from Bakan Plastics, Inc., Kansas City, Mo. The device, featuring a new polyethylene inner seal and threaded protective cap of the same plastic, may be inserted directly into the container and sealed during the filling operation. Sprayers are equipped with either metal, "Bakelite" or urea caps to fit plastic, glass or metal containers of various sizes.

The sprayer body is made of "Tyril" styrene-acrylonitrile copolymer plastic supplied by Dow Chemical Co. Detergents, oil based products and other chemical specialties can be dispensed using this plastic material.

The spray attachment is delivered completely assembled for high speed packaging lines. A capping machine for use with this type of sprayer has been designed by Consolidated Packaging Machinery Corp., Buffalo, N. Y. The machine automatically sorts and inserts sprayers into the containers and tightens the spraying unit cap at approximately 170 units per min.

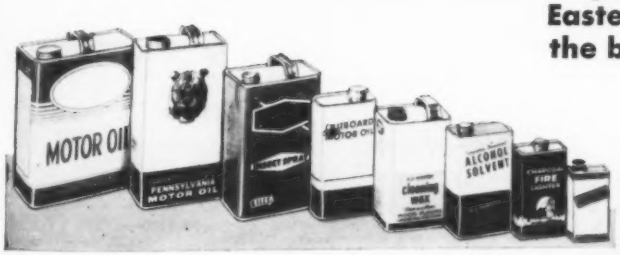
Patents on the spray attachment are held by Real Kill. Available for any specialty but pesticides.

GOOD PRODUCTS

Deserve GOOD CONTAINERS

Specify Eastern for the best in

DEPENDABILITY
DESIGN
DURABILITY
DECORATION
SERVICE



SIZES: 12 OZ. ROUND; and "F" STYLE ½ PINT, PINT, QUART, 40 OUNCE, ½ GALLON, U. S. GALLON, IMPERIAL GALLON, and 2 GALLON.

ROUND and SQUARE CANS IN ALL SIZES for a VARIETY of PRODUCTS

W N S

EASTERN CAN CO., INC.

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your product belongs

in glass by Brockway

Just as a boy and his Dad go hand in hand, so do consumer acceptance and products packaged in glass. • Your product can win this coveted consumer acceptance when presented in an attractive glass container by Brockway. • Products packaged in glass have proven themselves to be the products most readily accepted on sight by the consumer. Seeing is believing . . . and when they see your product displayed in a glass container, consumer acceptance is assured. • A product that is worthy of consumer acceptance deserves a quality glass container by Brockway.

SYMBOL OF QUALITY · GLASS CONTAINERS ·

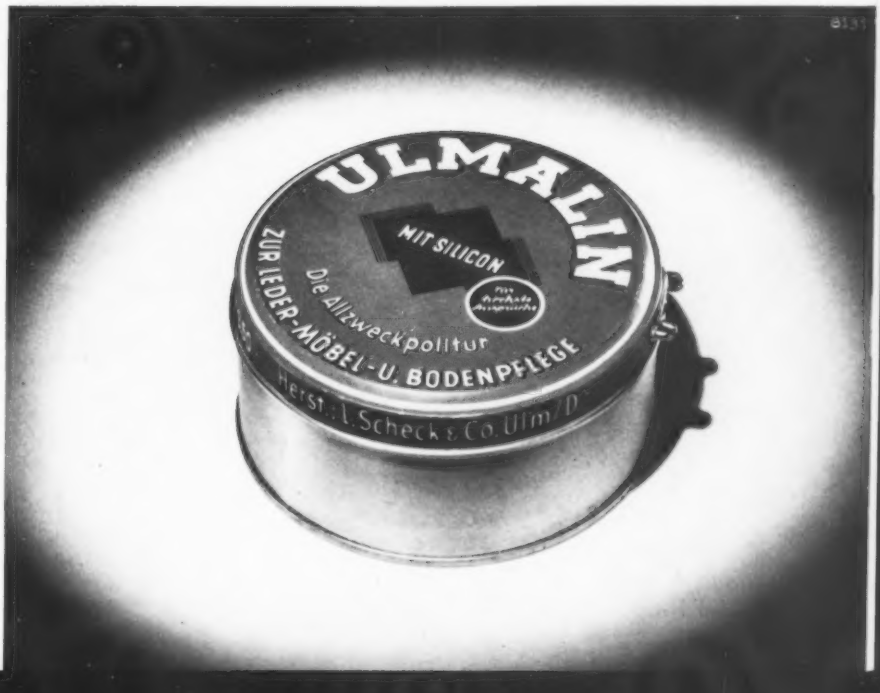
BROCKWAY GLASS
COMPANY, INC., Brockway, Pennsylvania
Sales Offices in Principal Cities

Aerosol cologne and soap are combned in this Christmas gift package, which also includes dusting powder, all from Yardley of London, Inc., New York. Lavender "Spray Mist" in gold finish pressure package and soap and dusting powder in same fragrance are packaged in blue and gold gift box to retail for $5.65 plus federal tax.

Suggested by Lentheric, New York, as a Christmas gift for younger misses who may be traveling is soap on a rope from the "Tweedie" toiletries line. Soap has its own traveling case, too, front and rear panels of which are shown left and right, respectively, in photo. Rear panel features cut-out traveling costume and "Tweedie" paper doll.

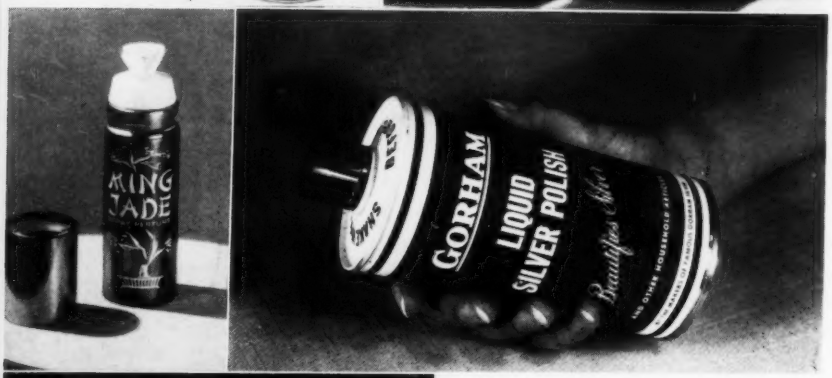
What's New?

Recent all-purpose, paste polish containing silicone is marketed under trade name, "Ulmalin" by L. Scheck & Co., Ulm/Donau, Germany. Surfaces are first cleaned with the product, then a thin film is applied and immediately buffed with soft (preferably woolen) rag. Range of applications includes shoes and other leather surfaces, floors of all types, furniture, painted surfaces, including those of automobiles, bicycles, etc. Product is also available in liquid form. Can body is not decorated, but metal friction top is lithographed in two colors. Can is opened by turning "butterfly," shown on right side of can top.



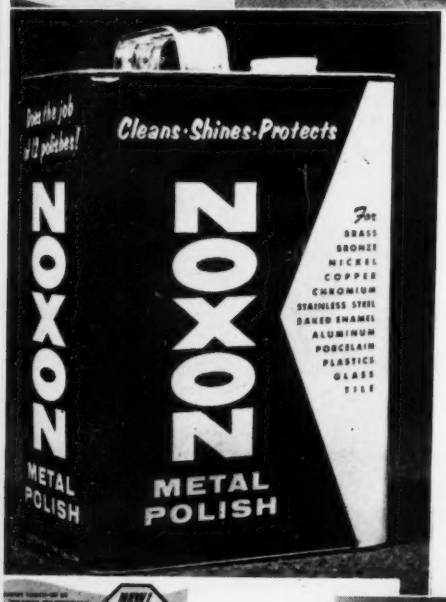
Push button "Aero Snow" flakes has recently been added to the aerosol products line of Boyle-Midway, Inc., New York. When pointed upward spray creates effect of falling snow. Packaged in 10-ounce Continental can, "Aero Snow" container is fitted with B-9 model aerosol valve and special button supplied by Valve Corporation of America, Inc., Bridgeport, Conn.

Completely new package adopted recently by Nu-Way Products, Inc., Ft. Worth, Tex., for its "Nu-Way professional type" bleach consists of new bottle, label and closure. All supplied by Owens-Illinois Glass Co., Toledo. Package formerly used appears at left in photo top right. New bottle has blown lettering at shoulder identifying product.



New purse-size aerosol perfume dispenser now being marketed by Stanley Home Products, Inc., Easthampton, Mass., under trade name "Ming Jade." Three inch aluminum outer case by Peerless Tube Co. has anodized, metallic blue-green finish and white lettering. Metered valve and actuator button are by Valve Corp. of America, Bridgeport, and protective metal cap by Metal Fabrications, Waterbury.

New package for "Gorham" liquid silver polish of Gorham Co., Providence, is 12-ounce Continental detergent style can. Label is predominantly blue with red and white reverse lettering. Plastic cap is red.



For industrial users, "Noxon" polish of Noxon Co., Jersey City, N. J., now comes in new bright green and white gallon can. Can spout is drip-proof says the maker of this glass and metal polish.

"Esy-Off," another new pressure-packaged product of Boyle-Midway, Inc., New York, is a cleaner-polish for glass, chrome and porcelain. Packaged in 15-ounce American can, the product retails for 49 cents. Valves are by Oil Equipment Laboratories, Elizabeth, N. J., and caps by Sterling Seal Co. and West Penn. Boyle-Midway does its own filling at plants in Cranford, N. J., and Chicago.

New 20-unit car dealer counter display announced recently by Dupli-Color Products Co., Chicago, for its line of push-button touch-up auto paint sprays. Unit shown is one of eight new all-metal point-of-sale display merchandisers available with the firm's line. Others range up to 300-unit floor display. Both counter and floor displays are finished in lithographed sheet metal. Four-color "Plexiglass" display signs are mounted above the stands.

Krylon, Inc., Norriistown, Pa., has just added a fast-setting, all-purpose glue to its line of pressure packaged paint products. The household glue is the first of a new line of diversified products to be introduced by Krylon apart from its line of spray paints and protective coatings. The glue is packaged in a four-ounce squeeze bottle to facilitate easy handling and application. Retail price: 59 cents. Plastic squeeze bottles are packed in counter display carton.

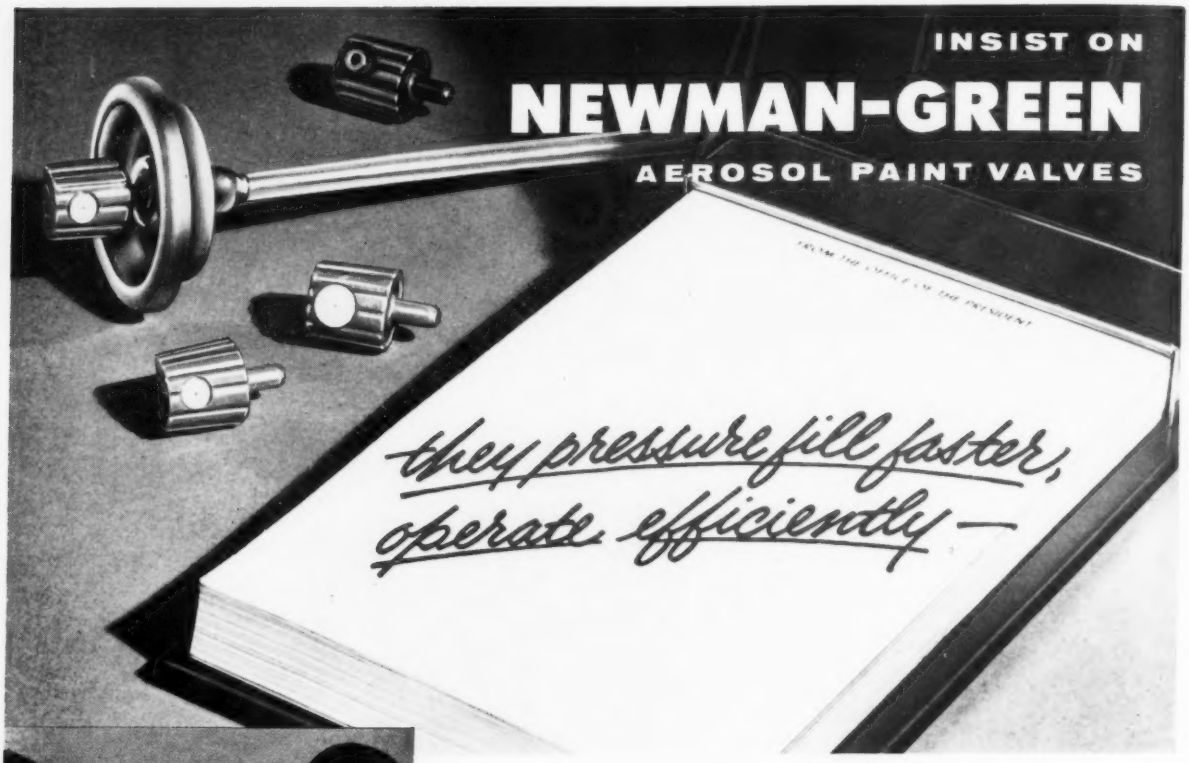
"Skin Bracer" shave lotion and Mennen cologne for men are now packaged by Mennen Co., Morristown, N. J., in opal decanter bottles manufactured by Hazel-Atlas Division of Continental Can Co., New York. Distinctive 5-ounce glass bottle is simply decorated with narrow oval label—supplied by Nevins Co.—and letter "M" in low relief on front, with the contents and name and address of maker on back, also in low relief. Gold, black and white color scheme is employed on "Skin Bracer" label, while gold and black are used in the cologne label.

Growing line of chemical specialties marketed by Electrolux Co., New York, features six aerosol products. In addition to glass and spray foam cleaner, the Electrolux line includes an insecticide, moth proofer and two room deodorants and sanitizers. The latter products are in mint and spice fragrances. ConnChem-PowrPak, Inc., Bridgeport, is the filler.

United Metal Cabinet Corp., Pottsville, Pa., has just introduced "Instant-Dry" green enamel in a 16-ounce pressure package. The aerosol dispensed enamel is being sold through sanitary supply and maintenance equipment jobbers to convert empty metal drums into waste containers for use with swing tops shown with the push-button cans. The green enamel for spraying the drums matches that used on United's waste receptacle lids.

Walt Disney bubble bath for children will be marketed by Lehn & Fink Products Corp., it was announced last month. The Disney character line includes, l. to r.: A jumbo canister of apple blossom fragrance bubble bath with bagatelle game in the top; Donald Duck, Pluto, Mickey Mouse and Dumbo. Apple blossom scented bubble bath is packaged in these molded plastic characters which become permanent toys when empty. All have imprinted "gift card" on their cartons. In front is Sleeping Beauty bubble bath package which contains 16 caricature packets of four fragrances: pink, apple blossom, carnation and lilac. Packets are named, respectively, "Flora," "Princess Aurora," "Fauna," and "Merry Weather" for four characters in six million dollar Disney movie, "Sleeping Beauty," which will be released in 1959.

For exclusive features found only in the leader...

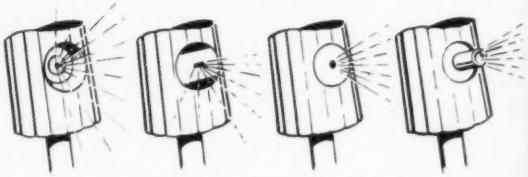


Make a comparison test yourself and you will see why Newman-Green is the leading supplier of aerosol paint valves. The simple proof-by-comparison fact shows how *Newman-Green valves work better than any other make.* They work better because of four exclusive features—features that assure trouble-free filling and dependable operation. Only Newman-Green provides these four extra benefits:

1. All metering orifices in the spray head are easily accessible.
2. No small orifices are drilled in metals parts.
3. Delivery tubes are swedged on—not slipped over—valve body.
4. Spray pattern can be varied completely by changing only spray head.

You assure success when you specify Newman-Green valves for all your aerosol paints. Call or write your nearest Newman-Green Representative today. You will get prompt attention and a product that is engineered for a better aerosol package today and in the future.

Four typical spray tips, all interchangeable in seconds.



Standard, Mist, Fan and Spatter patterns.

It would be a pleasure to send you our new price schedules and valve samples. Simply fill in the coupon below and mail to: NEWMAN-GREEN, INC., 151 Interstate Road, Addison, Illinois.

PLEASE INDICATE YOUR SPECIFIC APPLICATION_____

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Address_____ **State (Country)**_____

Company_____ **Title**_____

B

NEWMAN-GREEN Creative Aerosol Valve Engineering

151 Interstate Road, Addison, Illinois

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Deorex — This for deodorant for clothing. Filed Jan. 2, 1958 by The Upjohn Co., Kalamazoo, Mich. Claims use since Sept. 20, 1957.

Pine-Sol — This for general household cleaner. Filed Sept. 6, 1956 by Dumas Milner Corp., Jackson, Miss., by change of name from Milner Products Co. Claims use since June 28, 1956.

Plus — This for dry, granular detergent product. Filed Nov. 14, 1956 by Hagan Chemicals & Controls, Inc., Pittsburgh, by change of name from Hagan Corp., assignee of Calgon, Inc., Pittsburgh. Claims use since Aug. 1, 1956.

Kontrol — This for detergent for dry cleaning. Filed Sept. 23, 1957 by Eaton Chemical and Dyestuff Co., Detroit. Claims use since May 16, 1957.

Tergisyl — This for detergent having disinfecting properties. Filed Mar. 12, 1958 by Lehn & Fink Products Corp., Bloomfield, N. J. Claims use since Feb. 25, 1958.

Wilclean — This for waterless hand cleaner. Filed Apr. 1, 1958 by Wilco Co., Los Angeles. Claims use since Mar. 5, 1958.

D H C — This for household soap cleaner. Filed May 23, 1958 by Delightful House Cleaner, Greensboro, N. C. Claims use since Jan. 10, 1958.

Valpro — This for soaps and detergents. Filed June 16, 1958 by Valley Products Co., Memphis, Tenn. Claims use since January 1940.

Fresh 'N Dress — This for chemical preparation used as a clothes deodorant and a garment freshener. Filed Oct. 8, 1957 by La Bora, Inc., Chicago. Claims use since July 31, 1957.

Bulan—This for liquid hand soap. Filed Oct. 28, 1957 by Augustus Mierson, doing business as Bulan Co., San Francisco. Claims use since July 17, 1957.

Living Beauty—This for shampoo. Filed Feb. 20, 1958 by Living Beauty, Inc., Memphis, Tenn. Claims use since Dec. 5, 1957.

Crest of Beauty — This for shampoo. Filed Feb. 20, 1958, by Living Beauty, Inc., Memphis, Tenn. Claims use since Dec. 5, 1957.

Beauty Creations — This for shampoo. Filed Feb. 20, 1958 by Living Beauty, Inc., Memphis, Tenn. Claims use since Dec. 5, 1957.

Dubl-Deth — This for insecticide. Filed June 25, 1956 by Destruxol Corp., Ltd., doing business as Destruxol Corp., Pasadena, Calif. Claims use since May 14, 1956.

Chempel—This for room deodorants. Filed Aug. 14, 1957 by Chempel, Inc., Camden, N. J. Claims use since Feb. 1, 1957.

Detamide—This for insect repellent. Filed Jan. 6, 1958 by Cowles Chemical Co., Cleveland. Claims use since Oct. 22, 1957.

Lam—This for cold water soap. Filed Apr. 17, 1957 by J. C. Garet, Inc., Los Angeles. Claims use since Mar. 8, 1957.

Flor-Gleam — This for floor waxes. Filed Dec. 9, 1957 by Floyd S. Arnold doing business as Arnold's Supply Co., Rochester, Minn. Claims use since Oct. 15, 1957.

Triple Threat—This for insecticides. Filed Aug. 21, 1957 by DeMert & Dougherty, Inc., Chicago. Claims use since on or about June 12, 1957.

Nutrisept—This for germicide and disinfectant for brushes, combs, clipper heads, scissors, and files. Filed Mar. 20, 1958 by Middlebrooke-Lancaster, Inc., Brooklyn, N. Y. Claims use since March 1948.

Dream Set—This for hair set spray preparation. Filed Feb. 24, 1958 by The Andrew Jergens Co., Cincinnati, O. Claims use since Feb. 7, 1958.

Prize — This for deodorants. Filed Feb. 28, 1958 by Carter Products, Inc., New York. Claims use since Jan. 23, 1958.

Insco — This for insecticides and fungicides. Filed Sept. 27, 1957 by Insect Control Sales & Service, Candor, N. C. Claims use since Sept. 1, 1954.

Airmist—This for room deodorants. Filed Jan. 21, 1958 by Consolidated Royal Chemical Corp., Chicago. Claims use since Nov. 9, 1957.

SPD—This for liquid cleaning preparation for metal parts and the like. Filed Mar. 25, 1958 by Pennsylvania Refining Co., Cleveland. Claims use since Feb. 20, 1958.

Amazing — This for window cleaning compounds. Filed Apr. 28, 1958 by William E. Sievers, Long Beach, Calif. Claims use since Apr. 2, 1958.

Typex — This for detergents utilized principally in cleaning automotive vehicles. Filed Mar. 27, 1958 by Wright Chemical Corp., Chicago. Claims use since Apr. 23, 1948.

Spirit Away—This for detergent impregnated tissue. Filed July 31, 1958 by Kee Lox Manufacturing Co., Rochester, N. Y. Claims use since about April 1958.

Orbit—This for liquid and dry powdered detergents. Filed Aug. 12, 1958 by Hagan Chemicals & Controls, Inc., Pittsburgh. Claims use since June 9, 1958.

Mark T. Concannon

Crown Names Concannon

Mark T. Concannon has been named manager of closure sales for the middle Atlantic region of Crown Cork & Seal Co., Philadelphia, it was announced last month by Robert J. Siebert, middle Atlantic regional sales manager.

In his newly created position Mr. Concannon assists in the sales development of all closure division products. He joined Crown last August.

—★—

Realigns Glass Operations

The Hazel-Atlas Glass division of Continental Can Co., New York, plans to more than double the production capacity of its newest glass container plant which began operation last year at Plainfield, Ill., it was announced recently by J. Gordon King, general manager. Later this year the division will close the older of its two glass plants at Zanesville, O., and a plant in Grafton, W. Va.

Mr. King cited greatly increased freight rates and excessive concentration of the glass industry in the western Pennsylvania, eastern Ohio, and West Virginia region, as factors which brought about the moves. Meanwhile the Illinois location is within convenient shipping range of 30 per cent of the glass container market. Less than 30 miles from Chicago, the Plainfield plant will eventually have a glass container research and development center.

Chairmen, Aerosol Division, **CSMA, 1948-1959**

1959 — Chairman-elect E. J. McKernan, Seaquist Mfg. Corp.

1958 — W. Earl Graham, Clayton Corp.

1956-7 — Charles E. Beach, John C. Stalfort & Sons.

1954-5

And One To Grow On!

A SALUTE TO THE AEROSOL DIVISION OF CSMA

on its 10th Anniversary

That extra birthday candle—the one to grow on—is especially appropriate as the Aerosol Division of the Chemical Specialties Manufacturers Association enters its eleventh lusty year. A year in which the aerosol industry will make further strides in a spectacular growth that has carried it from 5 million units in 1947 to well over 400 million in 1958.

On this tenth anniversary, General Chemical joins in saluting the Aerosol Division of CSMA . . . its chairmen, present and past . . . its many committees . . . and all its members—aerosol marketers, fillers and suppliers. All are working together to make America's great aerosol industry still greater—a one and one-half billion dollar business before the Division adds five more candles to its birthday cake.

genetron®
aerosol propellants

Putting the "push" in America's finest aerosols

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

1954-5 H. R. Shepherd, Aerosol Techniques, Inc.

1952-3 Dr. Edmond G. Young, E. I. du Pont de Nemours & Co., Inc.

1948-51 Harry E. Peterson, Peterson Filling and Packaging Co.

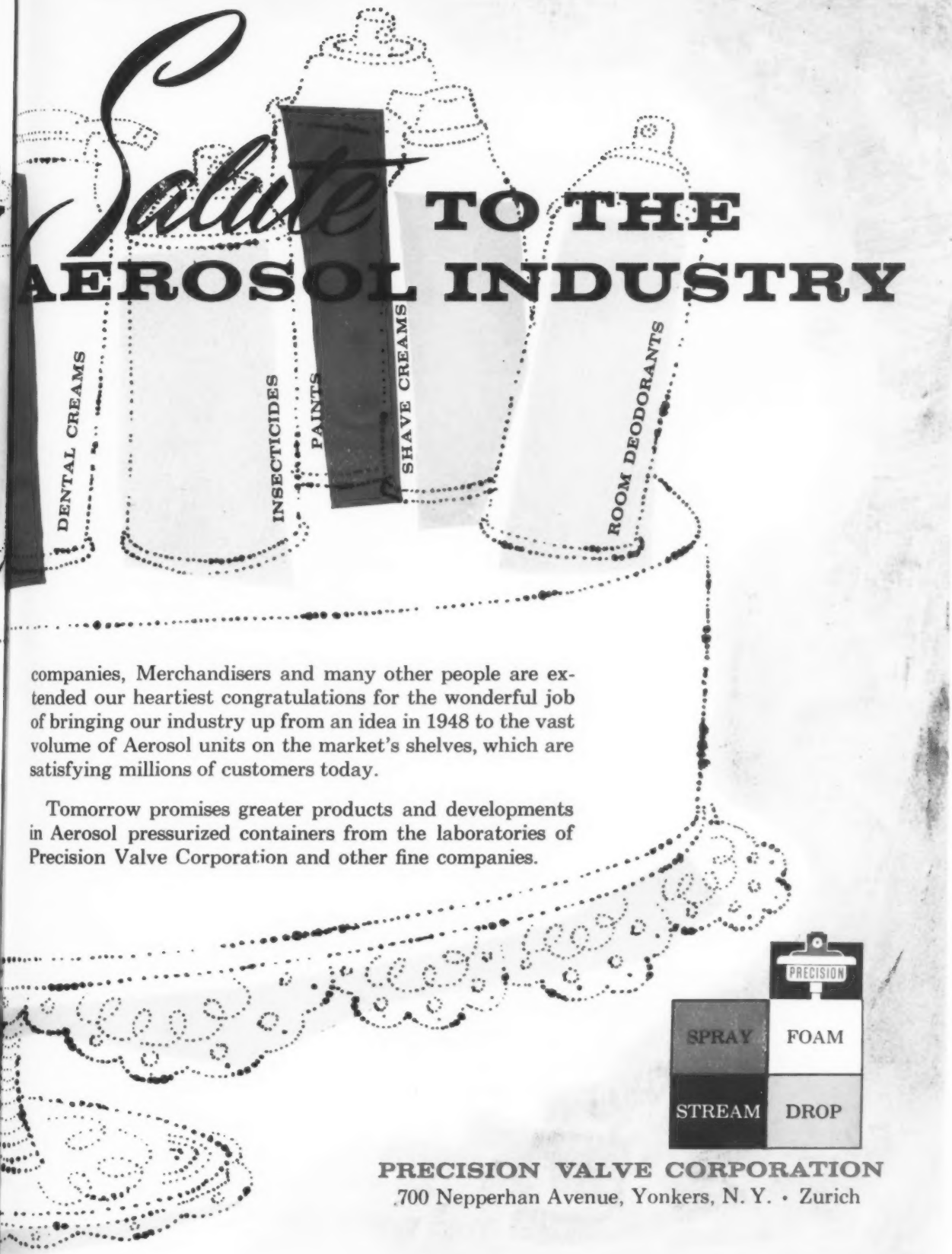
A TENTH ANNIVERSARY

May we thank the many people, companies and investors for the huge success we in the Aerosol industry have mutually enjoyed.

Since the first pressurized package was tested and marketed, many products have been developed by the Aerosol industry to raise the volume of units in the relatively short time of ten (10) years to over 400 million units this year.

Can companies, Fillers, Propellant companies, Valve

Salute TO THE AEROSOL INDUSTRY



companies, Merchandisers and many other people are extended our heartiest congratulations for the wonderful job of bringing our industry up from an idea in 1948 to the vast volume of Aerosol units on the market's shelves, which are satisfying millions of customers today.

Tomorrow promises greater products and developments in Aerosol pressurized containers from the laboratories of Precision Valve Corporation and other fine companies.

PRECISION
SPRAY FOAM
STREAM DROP

PRECISION VALVE CORPORATION
700 Nepperhan Avenue, Yonkers, N. Y. • Zurich

Class 1

Insecticides, Repellents, and Moth Proofers

"Insect Killer"

Electrolux Corp.
New York

Class 2

Room Deodorants

"Klean-Air"

Avon Products, Inc.
New York

Class 3

Paints, Enamels, Other Protective Coatings, and Paint Remover

"Quik Spray"

Sheffield Bronze Paint Corp.
Cleveland, O.

Class 4

Other Household Product

"Sprayrite Anim Repellent"

Virginia Smelting Co.
West Norfolk, Va.

1958 C.S.M.A. Aerosol Division

Photograph of the package for "Sizzl-Spray" barbecue sauce, a product of Anderson, a division of Heublein, Inc., Menlo Park, Calif., appears on page 145. "Sizzl-Spray" won best-of-show award as well as taking top honors in Class 11, Food Products. This was the first time a category for pressure packaged food was included.

Judges for the 1958 Aerosol Packaging Contest look over the winners in 11 product categories. Judges are (seated, left to right) Mrs. D. Culmore Lincoln, Stony Brook, N. Y., housewife; Dorothy Cassidy, managing editor, "Bride & Home" magazine; and Tedi Thurman, National Broadcasting Company's "Miss Monitor." Standing are Charles Alvey, Donald Deskey Associates, New York; Preston James Beil, publisher, "Variety Store Merchandiser" magazine; Francis E. Blod, president, Design Associates, Ltd., New York; and Irving Feldman, Zelart Drug Co., Westbury, N. Y.

Class 6

Hair Preparations

"Brite Set Hair Spray"

Cara Nome
Los Angeles

Class 10

Industrial Products

"D. C. S. Cutting Oil"

A. W. Chesterton Co.
Everett, Mass.

Class 5

Shave Products

"Gillette Foamy Shaving Cream"

Gillette Safety Razor Co.
Boston

Class 9

Medicinal and
Pharmaceutical Products

"Fungi-Rex Athlete's Foot Spray"

Rexall Drug Co.
Los Angeles

Packaging Contest Winners

Class 7

Perfumes, Colognes, and
Toilet Waters

"Chanel No. 5 Spray Cologne"

Chanel, Inc.
New York

Class 8

Other Personal Products

"Nail Dri"

A-M-R Chemical Co., Inc.
Brooklyn, N. Y.

RISDON VALVE QUALITY IS VITAL INSURANCE

The payoff point for all the time and money invested in your aerosol product is at the fingertips of the user. That is where repeat sales are made or lost.

When your customer pushes the actuator, the performance-insuring quality of a Risdon valve becomes vital. And nothing less than Risdon quality gives full assurance of customer-pleasing results over the entire life of the package. An inferior valve can turn out to be your most expensive "bargain".

Risdon quality... performance-proven on many millions of packages... is the result of extensive scientific research and development. It is zealously guarded at every stage of valve manufacture by Risdon's uncompromising quality control.

Most *leading* aerosol packagers keep their success secure by using only Risdon valves to dispense their products.

Contact Risdon for specific information on the valve for your product.

Write For Free Booklets On RISDON Valves

FOR Pressurized Products Packaged in Glass, Metal or Plastic Containers.

DISPENSING Conventional Aerosols, 3-Phase Products, Alcohol Base Products, Water-Base Products, Foam Products, Powder Sprays, Metered Sprays, Ultra-Low Pressure Applications, Products Containing Propellent Emulsions or Dispersions, etc.

RISDON

THE RISDON MANUFACTURING CO.
Valve Division • Naugatuck, Conn.

Fulfilling All Your Filling Needs

WHETHER your product requires liquid filling by gravity . . . or aerosol filling (with hydrocarbons, halocarbons, or nitrogen and other inert gases as propellants) . . . in can, glass or plastic containers . . . we have complete facilities for handling the job, large or small. Let us help you solve your filling probems . . . write, phone or wire

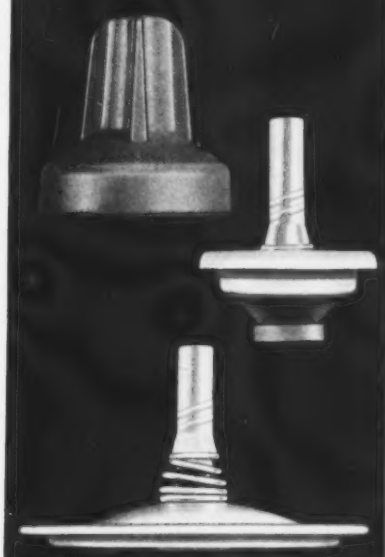
PETERSON
Filling and Packaging Co.
HEGELER LANE • DANVILLE, ILLINOIS

Crown
TAN FROM A CAN
Suntan oil, handily and evenly sprayed from Crown-pioneered Spra-Tainers, adds to fun in the sun. Only Crown makes both the seamless and fabricated types of pressure packages. Crown does the art and lithography, too. Dozens of products—cosmetics, pharmaceuticals, toiletries, paints, insecticides—are brightening their sales outlook through aerosol packaging. Crown can help you find a more prominent place in the sun for your product.
for cans • closures • crowns • machinery
CROWN
CROWN CORK & SEAL COMPANY, INC.
9300 Ashton Road, Philadelphia 36, Pa.

Clayton

"NOZZLE DOWN"

dispensing valves and covers



ALL VALVES AVAILABLE WITH COLOR-ENAMELED MOUNTING CUPS. HIGHEST QUALITY, CHEMICAL AND CORROSION-RESISTANT INTERIOR COATINGS!

DIP TUBE VALVE

The best available! Dispenses with forward or downward push. Gasses and dispenses uniformly. Pressure fills at highest speeds. No metal valve parts exposed to product.

Clayton

CORPORATION

NATURALLY BETTER FOR ALL FOAM, CREAM AND LIQUID PRODUCTS . . .

ALSO MANY SPRAY PRODUCTS!

Better in use — Clayton NOZZLE DOWN Valves dispense pressure-propelled products in the most natural and efficient way . . . pointing the product where you want it, eliminating misses and messes! Functionally dependable, they never clog . . . always stay intact. Flow rates to meet specific product requirements.

Better in production — they assure uniform gassing . . . pressure-fill at highest speeds with all types of propellants including nitrogen. Completely assembled — no parts to put together in your plant!

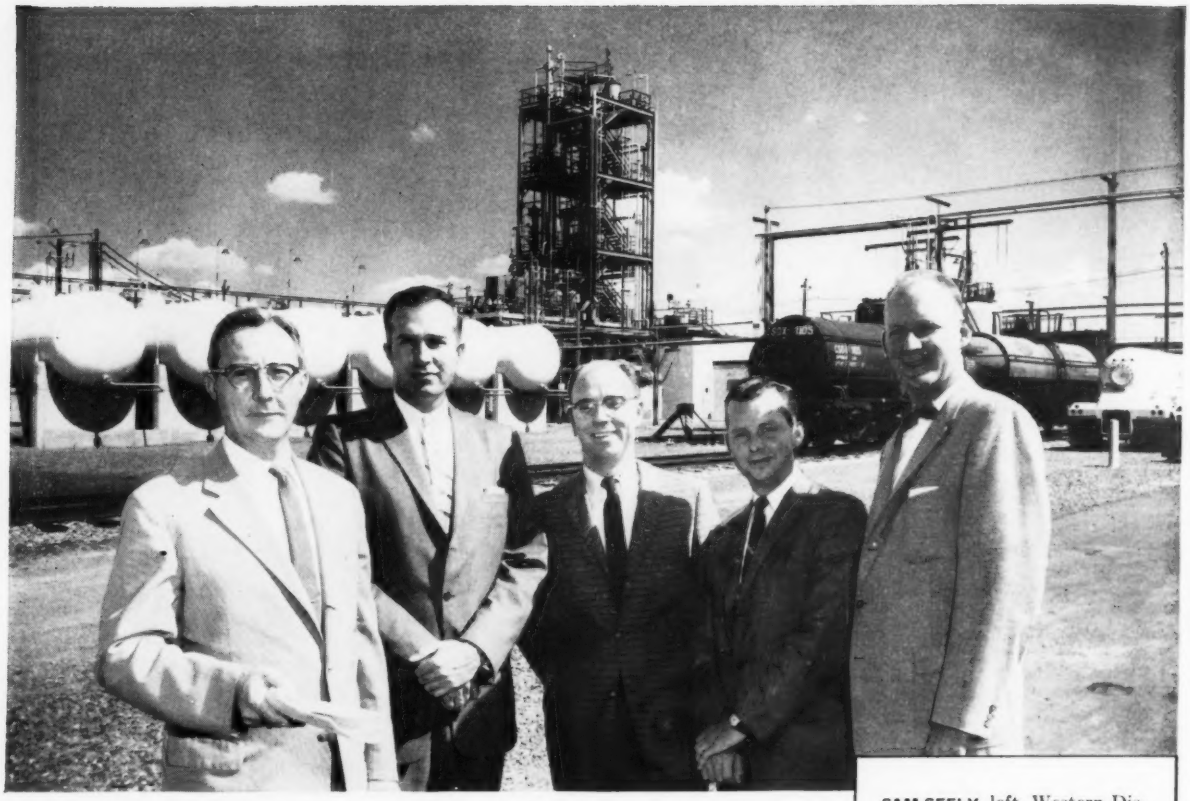
Better in shipment — components can't come apart! Your product stays safe with the Patented Screw Valve Covers . . .

THE MOST POSITIVE-ACTION COVERS ON THE MARKET!

Better in every respect — for shaving creams, hand creams, shampoos, suntan creams, rug cleaners, upholstery cleaners, etc . . . Clayton NOZZLE DOWN Valves are the most accepted, preferred and consistently bought valves for foam products . . . the most effective for all cream and liquid products and many spray products.

TIME TESTED AND PROVED
ON HUNDREDS OF MILLIONS OF CONTAINERS!

4205 FOREST PARK BOULEVARD • SAINT LOUIS 8, MISSOURI
WRITE, PHONE OR WIRE US FOR COMPLETE DETAILS!



SAM SEELY, left, Western District Manager of Du Pont's "Freon" Products Division and Technical Representatives Don Nesbit, Paul Dahlen, Doug McKenna and George Roewe. With their broad backgrounds in the chemical industry, and their specialized training in aerosol packaging and propellents, they are ready to put their know-how to work for western aerosol loaders and marketers at a moment's notice.

"Du Pont gives customers anywhere on-the-spot technical service and unmatched speed in delivery of Freon* propellents"

says Sam Seely of Du Pont

"A rush call for technical service or for an order of 'Freon' from anywhere in the United States can usually be taken care of in a few hours," says Sam Seely, Western District Manager of Du Pont's "Freon" Products Division.

"Here, we have a large technical staff and sales force to help our customers solve any problems they have. We manufacture 'Freon' propellents at Antioch, California, to serve western marketers and loaders. We make the best-quality propellents with the latest equipment, backed by Du Pont's unrivaled experience."

A local supply of "Freon" is just one of the advantages you get at no extra cost when you buy propellents from Du Pont. Loaders or marketers of aerosol products can take advantage of many sales-building services which only Du Pont offers.

In marketing, Du Pont surveys help you expand sales of your products. With national advertising and promotion, Du Pont works continuously to build markets for aerosols, bringing you a steady flow of new customers. In technical service, Du Pont's know-how and experience can help you with aerosol development or solution of production problems. In manufacture of "Freon", Du Pont offers aerosol propellents recognized throughout the industry for their quality, performance and properties. And only Du Pont can give virtual local delivery service from three plants in the U.S., one in Canada and a network of warehouses. **If you have a problem** in any area of aerosol development, production or marketing, call or write the Du Pont office nearest you. And be sure to buy "Freon" for all your propellent needs.

E. I. du Pont de Nemours & Co. (Inc.)
"Freon" Products Division 3112
Wilmington 98, Delaware

BRANCH OFFICES

40 Worth Street
New York 13, N. Y.

7 S. Dearborn Street
Chicago 3, Illinois

701 Welch Road
Palo Alto, Calif.

FREON® propellents

DU PONT
REG. U.S. PAT. OFF.

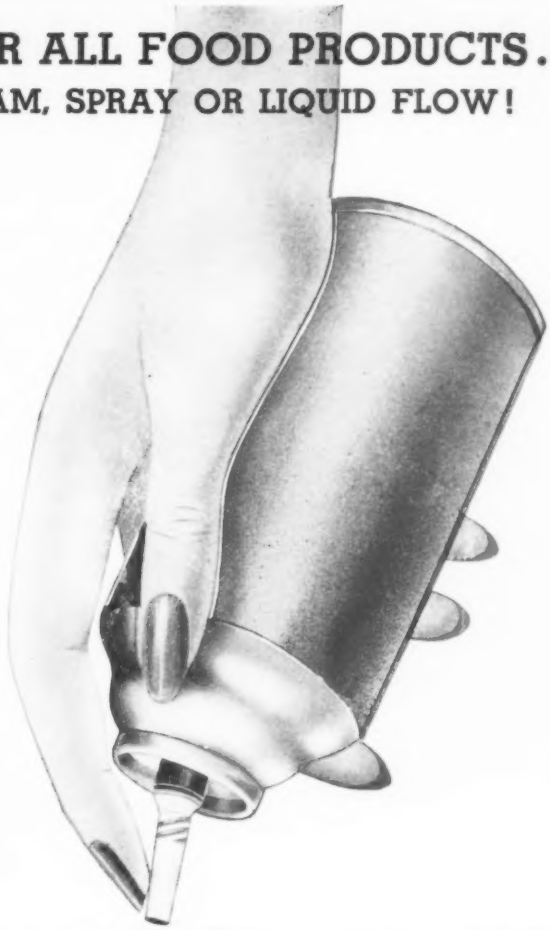
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

**Freon and combinations of Freon- or F- with numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon propellents.*

NATURALLY BETTER FOR ALL FOOD PRODUCTS...

PRESSURE-PROPELLED FOAM, SPRAY OR LIQUID FLOW!

Getting
right
down
to it...



The Clayton NOZZLE DOWN Valve serves your pressure-propelled product right . . . right down where you want it . . . employing the most natural and effective method of food dispensing.

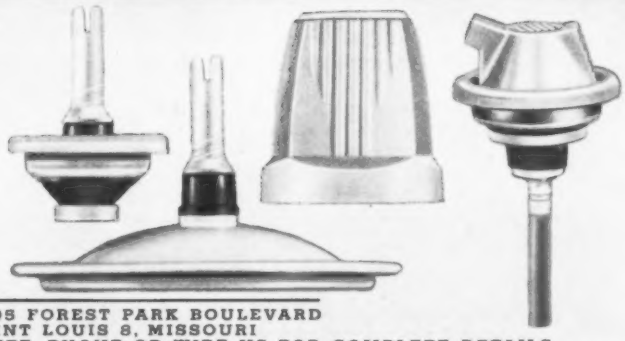
So naturally it's the food dispensing valve preferred and used by more men, women and children than any food-type valve in America! And naturally more and more manufacturers are relying on Clayton's vast knowledge and experience for help in developing food aerosols . . . are adopting the non-clogging, smooth-dispensing valve TIME TESTED AND PROVED ON HUNDREDS OF MILLIONS OF CONTAINERS!

With the ever-increasing trend toward pressure-propelled foods . . . and the need for controlled flow rates to meet specific product requirements . . . countless Clayton NOZZLE DOWN dispensing valves will be used for flavorings, sauces, condiments, salad dressings, spreads, frostings, toppings, shortenings, syrups . . .

FOR ANY TYPE OF FOOD REQUIRING FOAM, SPRAY OR LIQUID FLOW!

CLAYTON VALVES ARE CHEMICAL AND CORROSION-RESISTANT!

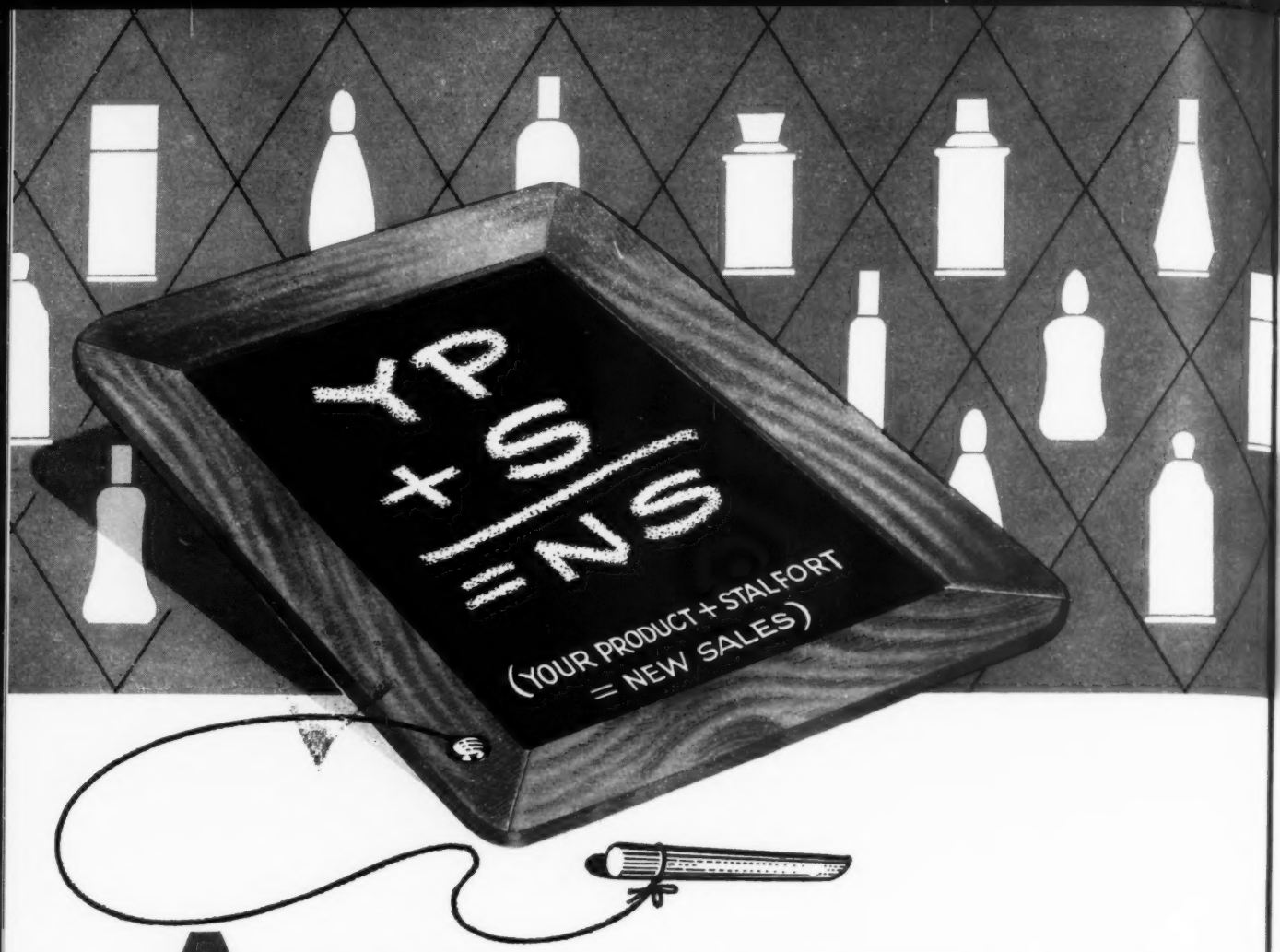
All Clayton Nozzle Down and Dip Tube Valves are available with color-enameled mounting cups. Highest quality chemical and corrosion-resistant interior coatings. All Clayton valves pressure-fill at highest speeds, assure uniform gassing and dispensing. All stay intact in shipment and use. Nozzle Down Valves are completely assembled.



Clayton

CORPORATION

4208 FOREST PARK BOULEVARD
SAINT LOUIS 8, MISSOURI
WRITE, PHONE OR WIRE US FOR COMPLETE DETAILS



AEROSOL PACKAGING IS THE KEY TO NEW MARKETS . . .

Limitless new sales horizons are opened to your product when it is aerosol packaged. Your packaging picture is not complete unless that product is available to the ever growing millions of consumers who are demanding the modern convenience of aerosols.

STALFORT will fill your liquid or powder concentrate in a metal or glass aerosol container, using an inert gas or liquified propellants. *Or,* we will prepare and package your own aerosol product in accordance with your own formula. *Or,* we will develop a formula for you and package it.

Your inquiries are invited; and they will receive the benefit of experience that pioneered and played a prominent part in developing today's aerosol techniques.

CUSTOM PACKAGING . . . . . .
Stalfort also packs private label cleaners, waxes, dyes, etc., in regular glass or tin containers.

JOHN C. STALFORT & SONS, INC.
319 W. Pratt St., Baltimore 1, Maryland

STALFORT

a leading name for over 90 years . . .

Please stop in at our suite during the C.S.M.A. Convention

PRESSURE PACKAGING

Says Food Aerosols Present Problems, Too

TO the contract packager who is loading colognes, shave creams, insecticides and similar products in aerosols, and who contemplates filling food products, the change-over is not a simple switch as between a room deodorant and an insecticide. Lines for chemical, soap and cosmetic products cannot be used also for pressure packaging foods. In fact, foods require a completely separate filling area which should be engineered just for these products. In essence, this was what a leading authority on pressure packaging told us recently.

Some of the failures in packaging food aerosols have been due primarily to attempts to alternate foods with non-food products on the same filling equipment, this expert stated. The problems of flavor, odor, taste, and above all bacteriological problems, – are so paramount that they stand head and shoulder above other problems encountered. Some aerosol fillers may still be under the impression that they can merely clean out the line which has been running on tooth paste today and run through chocolate syrup tomorrow. This authority says that it will never be done successfully.

In the economics of aerosol fillers, especially custom fillers, separate lines for foods, should they become big business, involve costs far in excess of those of operating a line for filling chemical specialties. But if separate lines are necessary, they are necessary, and not too much can be done about it, according to our informant. High cost, he says, is better than continued product failure.

Because foods of all kinds come under the jurisdiction of the U. S. Food and Drug Administration, there are certain minimum requirements the filler must meet in pressure packaging foods. Plants packaging food are liable to inspection at any time by Food and Drug representatives. Tile walls, or at least smooth, easily-cleaned walls, are a must. Similarly, there can be no exposed beams over filling lines. Floors must slant to floor drains. Higher standards of sanitation than ever before encountered in aerosol loading plants will be required. And this is not all.

One complaint against a food aerosol, whether justified or not, if brought to the attention of FDA could mean focusing attention of this body on all food aerosol packaging, which will be watched closely, anyway.

In short, even before food aerosols are marketed on any scale at all, loaders will have to make a substantial investment in their filling plants if they are to obtain their share of the contract food loading business. This is not an insurmountable obstacle, but it is one that will present a problem that the average loader will study long and well before going ahead, our aerosol authority reports.

—★—

Aerosol Division Formed

An aerosol marketing division was established recently by Adrian-Daniels, Inc., New York, advertising agency. According to Miss Etta W. Breger who heads the new division, its aims are to service smaller manufacturers who want to market and package their products in aerosol containers. The division is said to offer service on product manufacture, marketing, package design, advertising, public relations, and product research.

—★—

New Resinous Solution

A new resinous solution called "Darasol" has been developed by the chlorinated products division of Diamond Alkali Co., Cleveland, and is being distributed by Kerden Co. of that city.

Suitable for a wide range of aerosol applications in the paint and protective coating industry as well as potential uses in conventional packaging, the product is said to be non-flammable, provides a low odor factor, and eliminates valve clogging and the need of special valve treatment when in aerosol form. Other characteristics of "Darasol" reported by Diamond are the prevention of settling of pigments and coloring materials into solid masses, fast drying, and no sag or run under ordinary application.

So far, laboratory and field tests indicate the product is alcohol

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Copia to Newman-Green

Sam F. Copia has been appointed to the sales staff of Newman-Green, Inc., Addison, Ill., aerosol valve manufacturers, it was announced recently by Edward H. Green, president.

Located at the firm's Addison facilities, Mr. Copia assists in covering the mid-western sales area as well as being in charge of the company's internal sales functions. Previously with Dupli-Color Products Co., Chicago, since 1953, he was instrumental there in establishing an aerosol paint program.

Sam F. Copia

There's a big new market for paint

IN PRESSURE CANS

And to help you tap this new market, CANCO offers the broadest aerosol experience plus the most complete line of containers in the industry!

This year an estimated 50 million pressure cans will be used to package paint, clearly making pressurized products the fastest-growing part of the paint industry. Pressurized paints for touch-up jobs, for waterproofing or protective coating—all these and others have found strong consumer acceptance.

This is another example of the enormous potential for products in pressure cans. And you'll do well to explore this opportunity with Canco! For whether it's an insecticide, auto polish, hair spray—*whatever* you pack—remember these important facts:

- Canco offers the largest selection of pressure cans of any container manufacturer.
- Canco pressure cans have the strongest side-seam construction made.
- *Only* Canco offers an end-use warranty backed by research tests.

For further information, call the man from Canco today.

SEE ALL THAT'S NEW AND EXCITING!

Be sure to visit the Canco exhibit at the CSMA convention in New York City, Dec. 9-11. You'll see Canco's newest aerosol developments, plus Canco's unrivalled line of pressure cans!

CANCO American Can Company

resistant, salt resistant, and acid resistant, according to the company. It is available in one, five, and 55-gallon drums, either clear or in a range of colors.

Complete information may be obtained from Diamond, 300 Union Commerce Building, Cleveland 14, or Kerden, P. O. Box 1076, Station A, Cleveland.

★

Continental Names Sloan

The appointment of A. R. Sloan as manager of the Stockton, Calif., can plant of Continental Can Co., New York, was announced in November by J. W. Broomhead, general manager of the metal division's North-Pacific district. Mr. Sloan replaced Jesse V. Leishman who retired after 33 years with the company. Previously Mr. Sloan was assistant plant manager at San Jose, Cal., a post he held for the past two years.

★

New Aerosol Filler

Formation of the new firm of Pace, Inc., as contract and private label packagers to the aerosol industry was announced last month by Ira A. Wolfson, president. The company's headquarters are located at 901 Washington St., Wilmington 1, Del. A pressure fill line went into operation early this month. A product development laboratory and formulation facilities round out the firm's operation.

Mr. Wolfson was formerly with the "Freon" Products Division of E. I. du Pont de Nemours & Co., Wilmington.

Ira A. Wolfson

Oldach in "Freon" Post

Carl S. Oldach has been appointed director of sales of the "Freon" products division of E. I.

Carl S. Oldach

du Pont de Nemours and Co., Wilmington, Del. He succeeds William A. Bours, III, who in turn succeeds Douglas C. Newman, director of sales of the dyes and chemicals division, who will retire early next year. Dr. Oldach formerly was assistant director of the development department.

With the company since 1940, Dr. Oldach has held positions in the ammonia department which later became the polychemicals department.

Mr. Bours joined the firm's engineering department in 1941 and had been with the "Freon" products division since 1954.

With du Pont since 1918, Mr. Newman will remain as special assistant to the general management of the organic chemicals department until the end of February.

★

Liquified Gas Use Rises

Liquified gasses originally developed for use by the refrigeration industry, are now being used in greater quantity by the aerosol packaging industry than in refrigeration, Morris J. Root, technical director of G. Barr and Co., Chicago, reported last month in an address before the Chicago section of the American Chemical Society.

Mr. Root said that aerosol packagers use 43,000 tons of liquified gasses annually, with $30 million compared with 31,000 tons used by the refrigeration industry.

Other facts and figures listed by Mr. Root showed aerosols required an annual consumption of 54,000 tons of steel, one and one-half million gallons of ethyl alcohol, 750,000 pounds of synthetic resins, $3,500,000 worth of plastics for valves, caps and dip tubes, and 200 million feet of polyethylene tubing. Close to 340 million units of non-food aerosol products were produced last year according to Mr. Root.

★

Stalfort Booklet

A 22-page, illustrated booklet, titled "The Stalfort Story," has been published recently by John C. Stalfort & Sons, Inc., Baltimore contract packager. Tracing the company's history from 1868 to the present, the brochure describes in words and pictures Stalfort's aerosol loading and contract packaging facilities for waxes, dyes, polishes, and cleaners.

Also shown is equipment in the firm's new plant for filling aerosol containers with powder under sanitary and controlled humidity conditions, as well as automatic filling lines which have a capacity of 85 aerosol containers per minute. Steel mixing and holding tanks, bulk mixing tanks, and automatic machines for private label

The Seals Behind the Seal

The college seals reproduced here represent some of the alma maters of men and women at Aerosol Techniques, Inc.

ATi

AEROSOL TECHNIQUES

INCORPORATED

Exclusively private label manufacturer of Aerosol cosmetics, pharmaceuticals and chemical specialties.

MAIN OFFICE AND PLANT: 1730 State Street, Bridgeport 5, Connecticut
WESTERN DIVISION: 6423 Bandini Boulevard, Los Angeles 22, California

packaging in conventional containers are pictured.

The booklet is available free from the company, 319 W. Pratt St., Baltimore 1, Md.

—★—

Aerosol Filler Expands

Southeastern Packaging Co., St. Petersburg, Fla., contract aerosol loader, recently doubled its floor space from 5,000 to 10,000 square feet, a particularly interesting development since the firm has only been operating since Jan. 1, 1958. Harry J. Andruszko, formerly in business in New York in an entirely different field, is president of Southeastern. George A. Klitsch, formerly a group leader in the aerosol laboratory of Crown Cork & Seal Co., Philadelphia, is in charge of sales and technical developments.

—★—

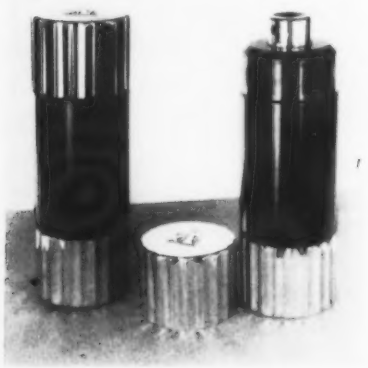
New Aerosol Container

A new aerosol container which delivers three ounces of toilet water through an unmetered valve with each application is being manufactured by the cosmetic container division of Scovill Manufacturing Co., Waterbury, Conn., for Lanvin Parfums.

Designed by Cartier, the container has a cap and base of golden polished brass with fluted sides and a center section of polished black aluminum.

The valve is supplied by Valve Corp. of America, Inc., Bridgeport, Conn., and the bottle is manufactured by T. C. Wheaton, Millville, N. J.

New Scovill aerosol container.



Status of Nitrogen Aerosols in Glass

Clarification of conditions under which aerosol products may be packed in plastic coated glass containers was made late last month by Wheaton Plastics Co., Millville, N. J. Nitrogen can be used as the propellant in glass packaged aerosols in sizes exceeding four ounces, Wheaton explained, and added that this propellant can be used safely in glass containers of up to 36 ounces.

Confusion has arisen, according to Wheaton, because of recommendations of glass container manufacturers themselves and the I.C.C. regulations which limit the size of containers to four ounces for products propelled by fluorinated hydrocarbons ("Freons", "Genetrons," "Isotrons," "Ucons"). However, the I.C.C. has reportedly granted exemptions on several nitrogen propelled glass packages of six ounce capacity and a revision of pertinent regulations is said to be under consideration. Currently, the Bureau of Explosives should be consulted prior to any definite marketing plans.

The recommendation of the glass container industry which specifies 25 psig at 70°F was conceived with a liquefied propellant in mind. Where nitrogen or another compressed gas is used pressures up to 90 psig are safe and acceptable, according to Wheaton. Reason for this difference: in case of breakage a nitrogen pressurized formulation will expand 200 per cent whereas a low pressure aerosol packaged with a liquefied propellant will expand 770 per cent and a medium pressure aerosol as much as 990 per cent.

Wheaton has developed a glass aerosol container sheathed in a nonadherent polyvinylchloride envelope. This envelope performs three different safety functions: It protects the surface of the glass from mechanical damage, thus making the container less prone to breakage. It is capable of 400 to 500 per cent expansion. In case of breakage it will balloon and hold the released pressure, which in the case of a nitrogen pressurized unit is well below its capacity. Finally, the Wheaton plastic jacket features vents through which the gases are gradually released. The balloon then returns to its original shape.

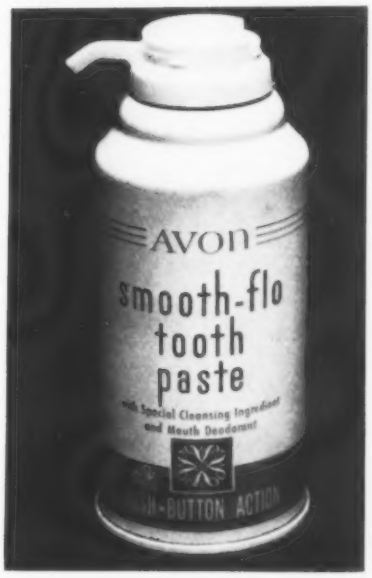
All glass containers, except the most eccentric shapes can be manufactured to handle safely pressures normally required in packages using compressed gases as propellants, according to Wheaton.

—★—

Crown Aerosol Mailer

An advertising broadside that dramatically shows the growth of sales of aerosol products was sent recently to executives of chemical, food, drug and cosmetic companies by Crown Cork & Seal Co., Philadelphia. The broadside, which Crown said was sent to 8,000 presidents, plant managers, sales managers and purchasing agents, was lithographed in four colors on a sheet 22 by 33¾ inches.

New "Smooth-flo" tooth paste of Avon Products, Inc., New York, is pressure packaged in a 6-ounce Crown Can Co. "Spra-tainer." Like the new Avon push button shave cream, "Smooth-flo" is dispensed through a Precision valve. Toothpaste retails for 89 cents, the shaving cream is 79 cents.



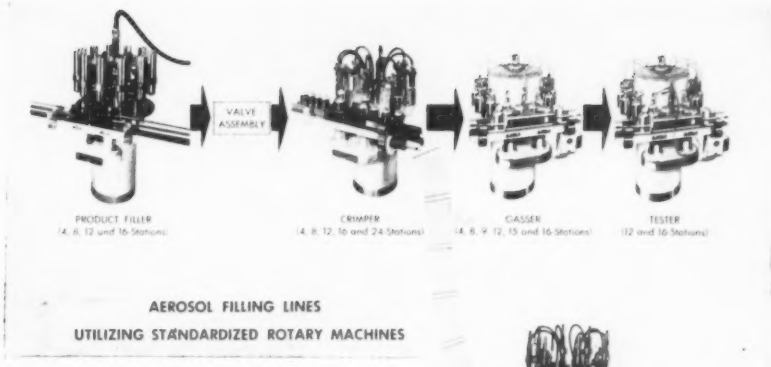
the lady
never heard of
G. Barr & Company

. . . but we're contributing
to her daintiness and charm

The famous brand of spray cologne, hair spray, tooth paste, antiseptic, car polish, room deodorant, and scores of other aerosol products found in homes all over America were in many instances developed in our research laboratories and private label manufactured by us.

While our name *never* appears on a package, G. Barr & Company's aerosol packaging know-how is the *"hidden ingredient"* that is helping to sell tens of millions of America's leading aerosol products today. Have you heard the G. Barr & Company story? Ask for facts today!

G. BARR & COMPANY
Private Label Aerosols
3601 S. RACINE AVE. CHICAGO 9, ILL.



Colton Production Line

A production line designed to meet a wide variety of aerosol container filling requirements from 60 to 200 cans per minute has been introduced by Arthur Colton Co., Detroit. The line is made up of a series of individual rotary machines, each performing a specific operation in the product filling, valve crimping, and pressurizing processes. A star wheel arrangement at the front of each of the "Colton-Alpha" machines removes containers one-at-a-time from the conveyor line, and deposits them in stations on the periphery of a rotary drum. Each particular operation is performed as the containers travel around with the drum and are redeposited on the conveyor line. Each machine is available in a variety of station numbers.

Five general types of machines are offered by Colton: filling machines, crimpers, gassers, testers, and pressure fillers. There is a variety of models in each so that manufacturers may choose the particular type of equipment needed depending upon the type of propellant used. When nitrogen or carbon dioxide gasses are employed, four of the five types of machines are used. For fluorinated and straight hydrocarbon propellants the crimper and pressure filler are utilized in the production line.

★

Du Pont Features "Freon"

"Freon" propellants as a power source for warning devices were featured in a television commercial last month on the "Show of the Month" sponsored by E. I. du Pont de Nemours & Co., Wilmington, Del. The message reached an estimated 30 million viewsr of the show, which was the second in this season's series of Du Pont's monthly spectaculars.

Stanley in Private Label

Stanley Home Products, Inc., Easthampton, Mass., recently offered the use of its plant facilities in that city to private label accounts for the manufacture of their products. The facilities include fully automatic filling and packaging lines capable of manufacturing all types of products, of both pressure and refrigerated, varying viscosities for packaging in all types of containers. A production control laboratory is responsible for these lines.

Stanley's product line includes deodorants, shampoos, hair sprays, shave cream, and shave lotion which is shipped to 18 warehouses throughout the country and sells for about $60 million a year. Similar products could be developed, according to the company, through its research development laboratory for private label sale.

Aerosols Featured at Hardware Show

FIFTY-one manufacturers of chemical specialties were among the 1,000 exhibitors at the recent National Hardware Show held in the Coliseum in New York Sept. 29 to Oct. 3. Over 50,000 different products were exhibited to over 40,000 buyers during the five day exhibit.

Aerosols led the chemical specialties exhibited at the show. Among the aerosols exhibited for the first time, Virginia Smelting Co., West Norfolk, Va. showed a new line of aerosols for the gardener. Flamemaster Chemicals, Inc., Culver City, Calif., exhibited various aerosol products which included "Nu Glu" a white glue in an aerosol package. Cling Surface Co., Buffalo, N. Y., demonstrated its new aerosol anti-slip material, "Sta-Put" for rugs and carpets. Kerr Chemicals, Inc., Park Ridge, Ill. exhibited its full line of paint aerosols which included a new texture spatter decorating paint. National Bird Control Laboratories, Skokie, Ill., demonstrated their "Roost No More" bird repellent packaged in an aerosol container. Sheffield Bronze Paint Co., Cleveland, O., and Seymour of Sycamore, Inc., Sycamore, Ill. demonstarted their lines of aerosol enamels and lacquers. Speco, Inc., Cleveland, O., showed their new aerosol wax product to make snow slide easily off snow shovels and called "Slikote."

Among non-aerosol exhibitors were Niagara Chemical Division, Food Machinery & Chemical Corp., Middleport, N. Y., who demonstrated their new rat bait station, complete in one unit. The product is packaged in a metal container that contains the company's own rodenticide "Diphacin" and is a complete unit reading for use.

A new moth-proofing tablet, "moth Cloud," which is ignited and burned in the clothes closet was exhibited by Continental Chemiste Corp., Chicago.

Among the novel chemical specialties exhibited was Fasey & Bestoff's deer repellent which is based on dried blood. The New York firm did not elaborate on this product.

MAKE YOUR PRODUCTS EASIER TO USE

AND YOU MAKE THEM EASIER TO SELL

TMC®

55, 75, 132 CU. IN.
240 LBS.
ICC APPROVED

KING SIZE
aerosol containers
INCREASE SALES

It is a proven sales-building axiom that when you make it easier to use, you make it easier to sell. Manufacturers of a wide range of fluid, viscous and powdered products are increasing sales by increasing uses with TMC KING SIZE Pressure Dispensers. They are a potent sales weapon for you! Write or phone for the "Latest Thinking on Merchandising Under Pressure."

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CORPORATION
LUdlow 7900
429 Bryant St. N. Tonawanda, N. Y.

New Aerosol Valve

A new aerosol valve called the "Mist-Mizer" is available from Aerosol Research Co., Forest Park, Ill. Molded in two pieces with a color contrasting insert, the spray tip features four interacting jet openings. Three styles are offered: model "K-38" tilt-action valve for unpigmented, non-aqueous products and cold or fast pressure filling; model "KN-38" is a push-down valve for cold filling and is recommended by the company for powders, space sprays, foams, and residuals; and model "AR-74" for cold and fast pressure filling and pigmented products.

The company, located at 743 Circle Ave., Forest Park, Ill., offers samples to manufacturers for comparison tests.

—★—

Crown Earnings Increase

Earnings and sales for Crown Cork & Seal Co., Philadelphia, increased for the three months period ended Sept. 30, compared with last year. Sales for the period amounted to $29,346,000, against $28,588,000 last year. Earnings rose from 12 cents a share in 1957 to 32 cents a share this year.

For the nine months ended Sept. 30 sales decreased from $89,426,000 in 1957 to $87,530,000. Earnings, however, jumped from a deficit in 1957 of 13 cents a common share to 88 cents a share this year on a net income of $1,412,000.

—★—

Canco Advances Three

Three executives have been advanced to top manufacturing posts at American Can Co., New York, it was announced late last month by William C. Stolk, president. Garland W. Reese, who joined American Can in 1920 as an engineer in the equipment division, has been elected a vice-president and assigned to the company's executive department. Previously he was vice-president of manufacture for the Canco division.

Robert B. Thompson, formerly general manager of manufacture, succeeds Mr. Reese as vice-president of manufacture, Canco division. With the firm since 1922, he has served as Baltimore plant manager and other manufacturing posts in American Can's eastern area and headquarters offices.

Leonard A. Britzke, president of Bradley Container Corp., replaces Mr. Thompson as general manager of manufacture for the Canco division. He has headed Bradley, an American Can subsidiary, for the past 18 months. Earlier he was general manager of engineering. Mr. Britzke joined American Can 23 years ago.

—★—

Continental Expands Plant

Continental Can Co., New York, is adding to its Tampa, Fla., can plant a 25,000 square foot warehouse, Orren R. McJunkins, vice-president of the eastern metal division announced last month. Construction began in September and is scheduled for completion by the end of the year.

Newest addition to the Krylon, Inc., Norristown, Pa., family of pressure packaged products is "Nursery Mist." Described as a "fragrant, germicidal deodorant," to control airborne bacteria in nurseries and other rooms, the product is packaged in a six-ounce Crown Can "Spra-tainer." "Nursery Mist" retails for 98 cents. There are 12 cans per carton. In addition to a wide range of spray paints and other protective coatings, Krylon also markets other room deodorants including, "Lady Lavender" and "Mist Fragrance" and "Pine" sprays.

The lady in your life would love CHANEL No. 5 Spray Cologne... get it for her while you're in the mood! Only $5.00 plus tax.

Now...
its precious fragrance delicately controlled in a measured spray metered by a VCA "Mist-Top" actuator & valve assembly

Each press automatically and precisely measures just the right amount of fragrance for perfect distribution. No loss, no fuss, no waste! Maximum atomization is assured from the very first application to the final drop. Each case holds 40 grams, or about 800 measured sprays.

VCA one-source service and technical assistance can propel your product into leadership, too.

Write, wire, phone for valve samples.

CSMA

Look in on us at the Commodore

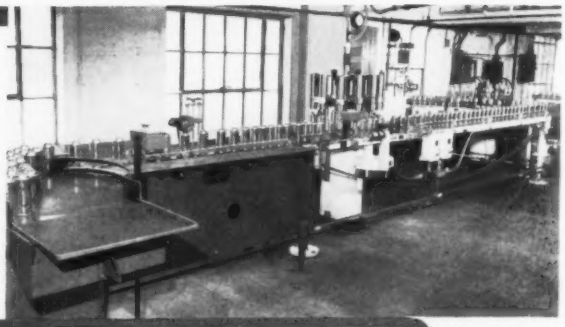
VCA INCORPORATED

1720 Fairfield Ave. Bridgeport, Conn.

HAVE YOUR PRODUCT PACKED IN AEROSOL DISPENSERS BY... *Scranton Aerosol Packaging*

NEWEST FACILITIES:

The equipment recently installed at Scranton Aerosol is the newest, and most complete in the industry. Your formula is exactly blended to your specifications, and packed in the container best suited to merchandise and sell your product. Production lines capable of turning out 80,000 completed units per 8 hour shift.

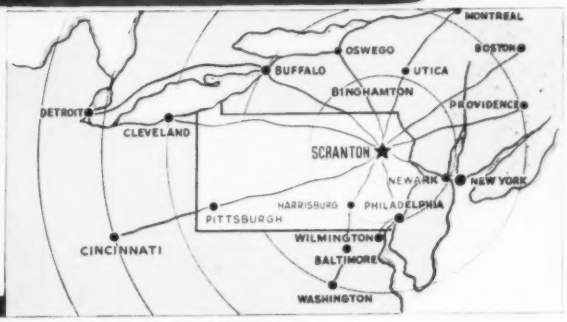


BULK STORAGE:

Facilities are available for the storage of bulk concentrate, hydrocarbon and fluorinated hydrocarbon propellants. Receiving facilities for tank truck or rail tank car are easily accessible for quick, safe discharge near both production lines. Economical prices on runs large or small, are yours because of high efficiency.

PERFECT DISTRIBUTION POINT:

40,000,000 consumers within a 250 mile radius. Over 100,000 sq. feet of fireproof storage space available at plant site in Scranton, Pa.—Focal point of Federal Highway program, or own railroad siding, 60 trucking lines, 4 airlines available to speed your shipment, large or small, to the markets of America.



WRITE TODAY FOR FULL PARTICULARS:

Scranton Aerosol is the newest, and most modern aerosol packaging plant in America. Every facility needed to accurately formulate, manufacture and package your product is available.

High speed production lines assure you of speedy completion of contracted run, saving you time, money. With this quick accurate service, your marketing and merchandising plans can be met with ease. Write to Scranton Aerosol today for full particulars.

More savings can be had by using our bulk concentrate storage facilities.

Scranton Aerosol Packaging

a division of THE SCRANTON CORPORATION • SCRANTON 9, PENNSYLVANIA

B.P.D.

BOMBRINI PARODI-DELFINO

Licensee for manufacture in the U.S.A.:
Aluminum International INC
GENERAL OFFICES: 1855 BLAKE STREET
DENVER 17, COLORADO
TERMINAL BOX 5108 MAIN 3-5131

Seamless impact extruded aluminum containers for the aerosol industry

No crimps, no solderings, no seams, no cements, NO LEAKERS!

Maximum resistance to pressure: distortion of the container's bottom occurs at over 250 p.s.i.

Minimum weight: a 12 oz can weighs 1.41 ozs, a 6 oz can weighs .89 ozs.

Full range of sizes to meet any requirement of the aerosol industry: wide choice of diameters, lengths and shapes.

Standard 1" opening to fit any normal cup-type aerosol valve.

Perfect decoration of the cans; base-lacquering in any color plus lithographic printing in up to four colors.

All containers may be internally coated with special lacquers if they are to be filled with corrosive products.

BOMBRINI PARODI-DELFINO - 267, VIA DEL CORSO - ROME, ITALY

nublivision

Here's what fillers and marketers of aerosol products will get with new UCON Propellants:

FIVE TOP-QUALITY GRADES, to meet aerosol product specifications for pressure, stability, safety, and dryness.

TECHNICALLY-TRAINED REPRESENTATIVES—who know aerosol markets—to help fillers and marketers choose the most efficient and profitable combinations of UCON Propellants for aerosol products. They will give practical advice and assistance on containers, valves, equipment . . . provide valuable technical and market data.

EXPERT TECHNICAL SERVICE to help fillers and marketers develop profitable new aerosol products, modernize and improve present ones.

ON-TIME DELIVERY of the quantity wanted, from a nation-wide network of distribution points.

GUARANTEED FULL WEIGHTS, because every CARBIDE tank car carrying UCON Propellants will be weighed individually, *at a standstill.* That means *full delivery* . . . and protection against money losses!

Years of Experience Back
The High Quality of UCON Propellants

. . . and the technical assistance that will be available to you. CARBIDE has long been active in the fields of emulsion technology, surface-coating technology, silicones, solvents, and the manufacture and handling of gases . . . all associated with the aerosol industry. Thus, UCON Propellants are a logical extension of CARBIDE's research and development programs.

For more information on UCON Propellants—products of America's newest fluorocarbons plant—write: UCON Propellants, Union Carbide Chemicals Company, 30 East 42nd Street, New York 17, N. Y. Call, write or wire us, today! Attention: Dept. C-12

"Ucon" and "Union Carbide" are registered trade marks of Union Carbide Corporation.

Ucon
BRAND
propellants

UCON Propellants will be available in five grades

UCON Propellant 11 Trichloromonofluoromethane
UCON Propellant 12 Dichlorodifluoromethane
UCON Propellant 22 Monochlorodifluoromethane
UCON Propellant 113 Trichlorotrifluoroethane
UCON Propellant 114 Dichlorotetrafluoroethane

UNION CARBIDE CHEMICALS COMPANY *Division of Union Carbide Corporation*

EDWARD GREEN
President

WALTER O'NEILL

JOE GREGORY

ROBERT OLLEN

SAM COPIA

HOWARD POUND

WILLIAM STOEPKER

The NEWMAN-GREEN Aerosol Valve Team

Wishes You A Very Successful 1959

It has been a pleasure and a privilege to serve you during 1958. The Newman-Green creative staff believes that a product is no better than the people who produce it, and we pledge ourselves to continually trying to increase the built-in advantages and quality of Newman-Green's valves.

NEWMAN-GREEN *Creative Aerosol Valve Engineering*

151 Interstate Road, Addison, Illinois

Revolutionary New MIST-MIZER Mechanical Break-Up Tip

For the finest atomization ever produced!

What makes the new Mist-Mizer superior to any mechanical break-up tip now on the market? The answer . . . revolutionary new "Quadruple Jet Spray" design!

Instead of only one "path" or chamber to set up the action necessary for complete atomization of your product, the exclusive MIST-MIZER tip has FOUR inter-acting jet spray openings to thoroughly disperse and break up the product into millions of mist-like particles. This means you not only get greater atomization at any operating pressure, but you can often produce better products at lower cost . . . with savings that can more than pay for the entire valves!

Because the A. R. C. MIST-MIZER spray tips are molded in two pieces instead of only one, tolerances are much closer . . . assuring the greatest uniformity of spray pattern ever produced! And, with the insert of contrasting color, the user immediately recognizes the spray direction.

Whether you want to produce a better product or just save money, we know that MIST-MIZER Spray Tips will be on your next order! Prove it yourself . . . free! We'll gladly send samples for you to make comparison tests with any A. R. C. valves described below. Write today, telling us the type of product you want to test and the number of sample valves you'll need. There's no cost or obligation.

NOW AVAILABLE IN 3 STYLES OF VALVES

K-38
Tilt-action valve recommended primarily for unpigmented, non-aqueous products. For cold or fast pressure filling.

KN-38
Push-down type of valve primarily for cold filling. Best for powders, space sprays, foams, residuals etc.

AR-74
For cold and extremely fast pressure filling. Ideal for pigmented products. No internal metering. Clog-proof, removable stem design.

AEROSOL RESEARCH COMPANY

Dept. [illegible], 743 Circle Avenue, Forest Park, Illinois • Cable Address: AERESCO, Forest Park, Illinois

And one shall be leader... business leadership isn't an honorary degree—it's earned by doing a job better than anyone else!

Chase stands at its 29th year milestone, acknowledged leader in packaging for one reason: superior research on more difficult problems in more product classes.

PRODUCTION VERSATILITY—Ample facilities to handle oil and water base, liquid and foam products, of all types in small or large quantities. No minimum run required and no maximum limit!

INCREASED PLANT FACILITIES—Our plant is centrally located for ideal distribution, with both rail and truck facilities. We offer warehousing, drop shipping in bulk lots, direct pick-up and routing by major national truck or rail lines.

Write or Phone: **CHASE PRODUCTS COMPANY**—Maywood, Illinois

Contract fillers of **AEROSOL** and **PRESSURIZED PRODUCTS**

ACETATES
ALCOHOLS
ALIPHATIC HYDROCARBONS
ALKANOLAMINES
AROMATIC SOLVENTS (Petroleum)
CHLORINATED HYDROCARBONS
GLYCOLS and POLYGLYCOLS
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ALL UNDER ONE ROOF

to give you fast, convenient service

KETONES
NAVAL STORES
PLASTICIZERS
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WAXES
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OTHER PRODUCTS: ALKALIES, ANTI-FREEZE, CHLORINATED PARAFFIN, GLYCERINE, OILS and FATTY ACIDS, POLY VINYL ACETATE EMULSION

See, call, or write your local member listed below!

AMSCO SOLVENTS & CHEMICALS CO.
4619 Reading Road—Elmhurst 1-4700
Cincinnati 29, Ohio

BUFFALO SOLVENTS & CHEMICALS CORP.
Box 73, Station B—Bedford 1572
Buffalo 7, New York

CENTRAL SOLVENTS & CHEMICALS CO.
2540 West Flournoy Street—SEeley 3-0505
Chicago 12, Illinois

DIXIE SOLVENTS & CHEMICALS CO.
Dixie Highway at Appleton Lane—Emerson 8-5828
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HOOSIER SOLVENTS & CHEMICALS CORP.
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Indianapolis 22, Ind.
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MISSOURI SOLVENTS & CHEMICALS CO.
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Kansas City 20, Missouri

OHIO SOLVENTS & CHEMICALS CO.
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SOUTHERN SOLVENTS & CHEMICALS CORP.
917 Jefferson Highway, P.O. Box 4067
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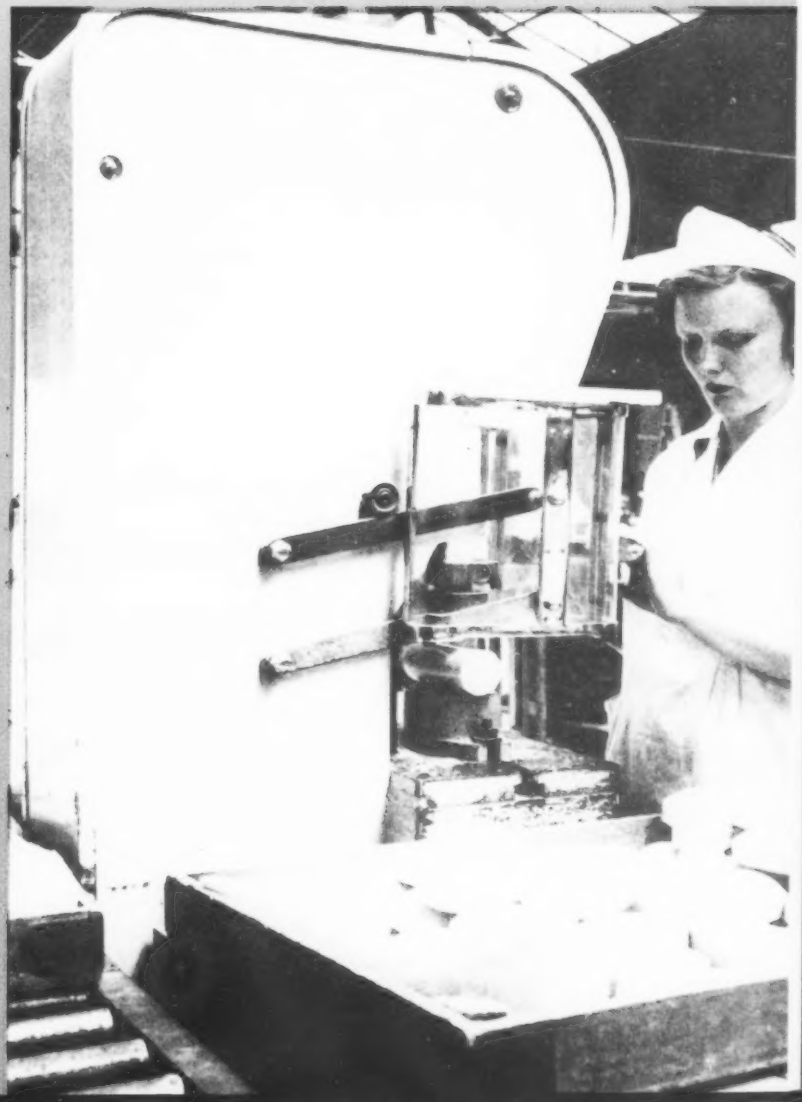


New five ton pneumatic toggle lever press of James Holt (Engineers), Ltd., Bolton, England, stamping out 16-oz. bars of Bourjois toilet soap in firm's East Croydon soap plant. See page 201.

the Aerosol Age

FLUORINATED HYDROCARBONS — NITROGEN — CARBON DIOXIDE

the "Gas Jet" Age

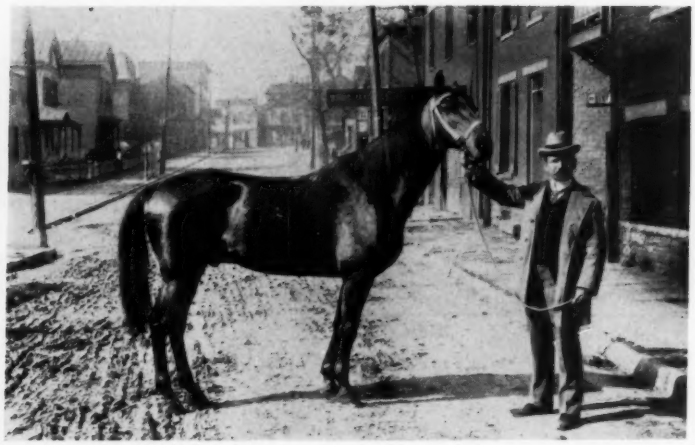
STRAIGHT LINE AND ROTARY PRESSURE CHARGING UNITS

the Kiefer Age

SINCE 1890

the future burns bright with "Gas Jet" buy Kiefer

an illustrated Treatise - comprehensive - concise - awaits your request



Karl Kiefer shortly after he arrived from Germany in 1890.

The Karl Kiefer Machine Co.

923 MARTIN STREET CINCINNATI 2, OHIO, U.S.A.

New York • Chicago • Boston • Houston • Los Angeles • Savannah • Philadelphia • San Francisco • London, England

Novel Press for Soap Stamping

TOILET soap consumption is still growing in the face of a general decline in the sale of soap products in favor of synthetic detergents. This situation prevails not only in the United States but also in Britain, Germany, and other highly developed countries. Within the toilet soap market, however, public preferences are shifting. Specialty soaps are gaining in popularity not only in the U. S. but also in Britain, where a growing demand for large toilet bars, 10 to 16 ounce sizes, is also reported.

To speed the production of these large bars and novelty items a five ton pneumatic toggle lever press to replace hand operated equipment has been designed by James Holt (Engineers) Ltd., Bolton, Lancs., England. The standard three and four ounce bars have long been stamped by high speed small automatic presses.

The cumbersome and laborious stamping of large size bars by hand operated presses has been eliminated at the East Croydon soap plant of Bourjois, Ltd., London, England, by installation of a battery of Holt presses. The five pound press, the heaviest in the Holt range, was found most suitable owing to the great resilience of the soap mass. Toggle lever presses show a considerable saving in air consumption compared with direct acting pneumatic units, according to Holt.

In the Bourjois plant the perfumed and colored extruded soap bar is cut into "billets" and conveyed to the presses in wooden trays. Girl operators manipulate the double-blow presses—"double-blow" because the downward ac-

Part of the battery of Holt patent pneumatic presses stamping out 16-oz. toilet soap bars at the Bourjois Soap Works.

Continuous Soap Plants

Photograph of a MAZZONI Vacuum Soap Dryer automatically producing toilet soap base for toilet soap manufacture.

• • •

★ The Vacuum Process, over all other old and new cooling methods, enables you to make use of the water at the temperature available at any factory as it is possible to cool the soap at such a temperature because of the vacuum and the peculiar devices provided — without resorting to expensive cooling equipment — so that its consistency is satisfactory no matter what the cooling water temperature is.

★ Our manufacturing range also includes: plants for continuously sulphonating and spray-drying synthetic detergents in the form of hollow beads—continuous fat splitting and fatty acid saponification plants — continuous glycerine recovery and refining plants.

★ **Since 1945 more than 200 plants have been installed in different countries of the world.**

Advantages of the MAZZONI Process:

★ Small plant space; only one operator needed.

★ Saves 70% in steam, 50% labor, 40% electric power.

★ Operates at low temperatures, avoiding deterioration of soap.

★ Vacuum process gives better toilet soaps. Deodorizing effect reduces perfume needs. Smoother, grit-free cakes which wash off evenly. Improved lathering.

★ Transparent toilet and laundry soaps without addition of glycerine, alcohol, sugar, and any other additives.

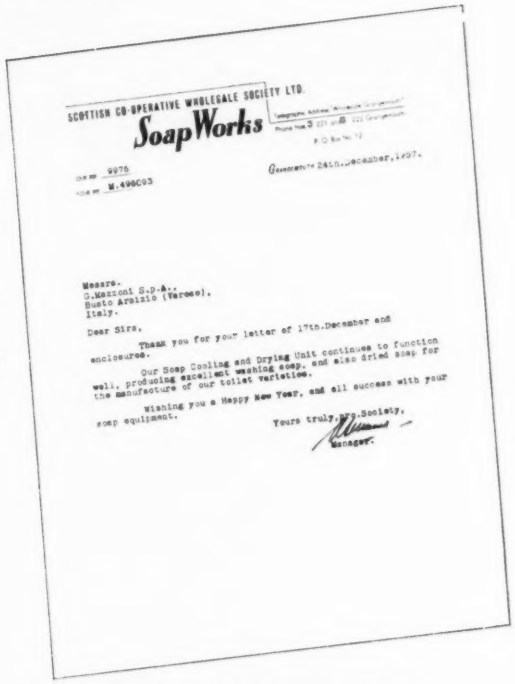
★ Complete installations (mixers, mills, plodders, cutters and stampers) for milled toilet soap and soap flakes.

★ Laundry soaps, pure from 62% fatty acids upwards or filled from 35 to 62% fatty acids, ready for pressing and immediate packing without slabbing, cutting, etc. Automatic perfuming device included.

★ Suitable for adaptation in any soap factory, — a compact, low-cost vacuum process, continuous from neat soap to pressing and wrapping.

★ Soaps showing a beta phase content from a minimum of 75 percent to a maximum of 100 percent. Analyzed in the laboratories of Procter & Gamble Company. Cincinnati. Analysis is given with their permission.

★ Plants for outputs of one-quarter-ton, half-ton, one ton, two tons, three tons or higher per hour.



SCOTTISH CO-OPERATIVE WHOLESALE SOCIETY LTD.
Soap Works

Messrs.
G.Mazzoni S.p.A.,
Busto Arsizio (Varese),
Italy.

Dear Sirs,

Thank you for your letter of 17th.December and enclosures.

Our Soap Cooling and Drying Unit continues to function well, producing excellent washing soap, and also dried soap for the manufacture of our toilet varieties.

Wishing you a Happy New Year, and all success with your soap equipment.

Yours truly,

Manager.

For further detailed information, write to

G. MAZZONI, S. p. A.

Busto Arsizio (Varese) Italy

Cable address: Cosmazzoni, Busto Arsizio

tion of the ram stamps the soap into the required shape in the die and a second polishing blow is obtained automatically when the guard is raised. In the case of a collar mould, the soap bar is lifted by means of the ejector bar, which operates automatically on the upward stroke of the ram after the guard is released.

Being non-electric, the Holt press eliminates one of the more obvious safety risks. In addition, each unit is fitted with a specially constructed safety guard made of tough transparent plastic. The press itself is activated by the manual lowering of this guard, a device designed to insure the safety of the operator.

By an exchange of dies or moulds, the Holt press can process any size toilet bar up to 16 ounces. Moulds of special design can be fitted for novelty shape soaps.

Low operating cost, easy maintenance, and almost foolproof operation are claimed for Holt pneumatic toggle lever presses. In addition to Bourjois, other well known British soap factories are said to be using these units.

In the foreground stamped 16 ounce bars ready to be wrapped in cellophane. In background the unstamped cut soap awaits blow of the pneumatic press.

Surfactants, Their Properties and Uses

SOAP and detergent mixtures are discussed in a general survey of synthetic detergents and their applications, by Hans E. Tschakert, *Soap, Perfume & Cosmetics*, Sept. 1958, pp. 867-870. The modern soap manufacturer tends to the simultaneous use of soap and synthetics for grained and fine soaps, for soap powders, shredded soaps, soap flakes, soft soap, and other products formerly made of soap alone. Soft soap is in many instances replaced by neutral combinations of synthetics.

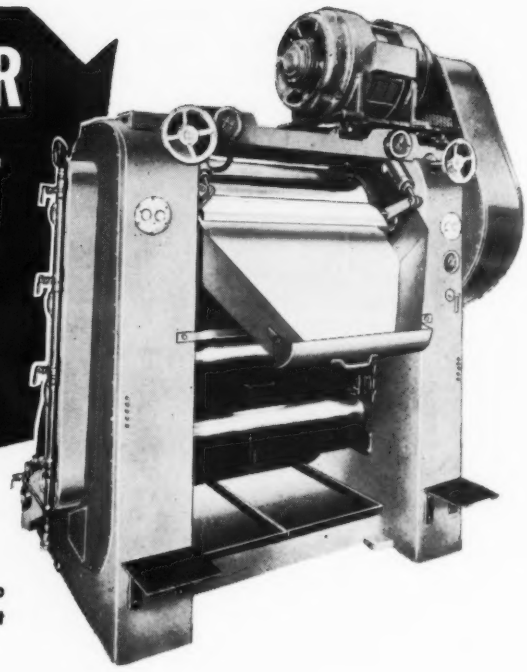
Soap bars, especially in the case of boiled or semi-boiled soaps, may show cracking, brittleness, flaking and insufficient gloss. Excessive moisture; treatment at incorrect temperatures; excessively high coconut oil content; uneven, too rapid, or excessive drying; and the incorporation of soap waste, are just a few of the reasons which may account for the above difficulties.

Addition of a suitable ethylene oxide condensation product before extruding or milling permits the basic soap to be homogenized correctly and counteracts the undesirable phenomena mentioned above. For the desired effect 0.75-1.25 polywaxes or two to five per cent synthetic detergent may be added. The author then quotes from his paper on "Ethylene Oxide Condensation Products in the Soap Industry," which appeared as an abstract in *Soap and Chemical Specialties*, Dec. 1957, p. 213, under the title "Improving Soap with Nonionics." Nonionics are shown to improve texture, homogeneity, brilliance, and foaming properties of soap, especially in cold water. Fragrance retention is improved. Detergency in general, and particularly in hard water, is increased. Incorporation of other additives is facilitated.

It is possible to raise the percentage of synthetic detergent referred to the fatty acid content of the basic soap, so that the result may be a so-called semi-synthetic soap. Similar combinations are of interest as washing compounds for use in commercial laundries. They will be formulated with phosphate or silicate phosphate builders.

The reverse method of adding soap to synthetic detergents is frequently adopted in the compounding of low sudsing deter-

THIS MACHINE IN YOUR COMPETITOR'S PLANT —can make things tough for you



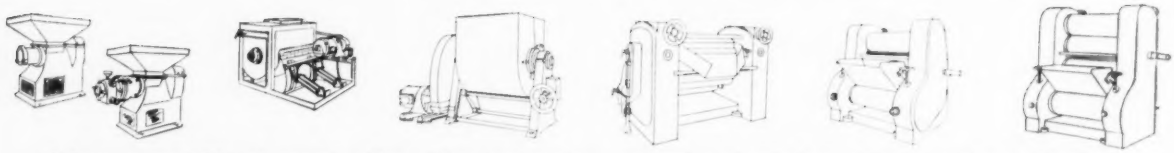
Lehmann Model 651-SV Sight-O-Matic Five-Roll Soap Mill—to provide three-fold gauge control over: product milling, take-off efficiency and temperature.

The LEHMANN 651-SV FIVE-ROLL SOAP MILL with SIGHT-O-MATIC* CONTROL definitely improves quality control, increases output, and reduces costs wherever it is installed. If your competitor has this equipment, and you do not, you are, in effect, yielding him a strong competitive advantage.

Current buyers' markets are becoming more selective every day. The manufacturer who uses less than the best production equipment can be sure of one thing—the money he "saves" by not buying modern machinery he will lose many times over in higher operating costs and reduced business.

We suggest that you send for complete information regarding Lehmann Soap Finishing Machines—learn what savings in time and money can be yours by installing Lehmann units in your plant to bring your operating costs down to rock bottom.

Lehmann's extensive line of soap processing equipment consists of: Roller Mills • Amalgamators • Preliminary Plodders • Finishing Plodders—each manufactured in a full range of sizes.



Lehmann would be pleased to offer milling test service on samples of your formulations, without obligation. Lehmann Certified Factory Reconditioning Service will return your present equipment to highest operating efficiency.

Send for further information on any or all of the machines mentioned here.

*Reg. U. S. Pat. Office. Sight-O-Matic Controls and other specialty devices can be furnished as optional equipment.

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gents, synthetic soap flakes, etc.

Incorporation of alkyl aryl sulfonates in soap base washing powder benefits detergency, lime dispersing power, and cold water lathering capacity of the final product. Fatty acid alkylolamides (they can only to a limited extent be regarded as nonionic) or alkylphenol oxethylates may also be used for added detergent value.

The author believes that the large scale use of the synthetic toilet bar is only a matter of time and publicity. Among raw materials for synthetic or semi-synthetic soaps he mentions the practically salt-free alkyl sulfates, alkylaryl sulfonates, fatty acid alkylolamides, emulsifiers, polyethylene oxide waxes and other waxes.

Synthetics Classified

Having dealt with soap synthetic detergent combinations, the author turns to the synthetic detergents proper, which he calls washing-active substances or "WAS". These he divides in anionics, cationics, non-ionics, amphoterics, neutrals, mixtures, and synergetics. Neutrals are defined as boundary surface-active substances which display a neutral reaction and do not possess an anion-active, a cation-active, a non-ionic, or an amphoteric character. Synergetics are substances which do not themselves possess any determined activity, but as additives to substances with a certain activity, of the latter. Selected fatty acid alkylolamides, added to alkyl aryl sulfonates, can, for instance, have a stabilizing effect on the lather, while their use alone is not so advantageous.

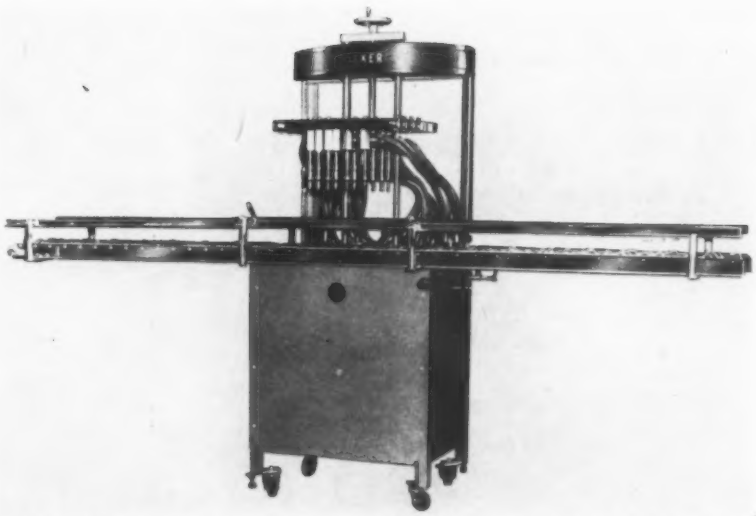
Rules of thumb are given to enable the production man to relate the carbon chain lengths to the characteristics of the surface active agent. These apply of course only to the usual C chain lengths of WAS, commonly used.

1. Water solubility of a synthetic detergent decreases with the length of the chain and with its branches. Accordingly a C_{18} substance will be less water soluble than a C_{12} substance of the same type. If the C_{18} surfactant is of a branched type, its water-solubility is likewise more favorable.
2. The wetting power grows with falling chain lengths to an optimum. Therefore the C_{18} substance has poorer wetting properties than a surfactant with C_{12}.
3. Resistance to hardness decreases with the length of the carbon chain. The C_{18} substance is less hardness resistant than the C_{12} compound.
4. Lather (disregarding cold and hot, or load lathering power) increases with the length of the C chain, taking the temperature into account, up to an optimum. At room temperature, the C_{12} substance possesses better lathering power than a C_{10} substance.
5. The longer the carbon chain of the main valency, the less hygroscopic and the more plastic the synthetic detergent. This phenomenon is further influenced by branching the C chain (supplementing with hydrophobic radicals).

A further rule of thumb for determining the efficiency of synthetic detergents is this: one portion of good anion-active WAS, 100 per cent active, with builder, corresponds under the same conditions to about three times the amount of soap, referred to the latter's fatty acid content. One portion of non-ionic, 100% active, with builder (builder is essential in this case) can be active up to four times the amount of soap, referred to the latter's fatty acid content.

Synthetic detergents are then classified according to their hot spraying properties, designed for

(*Turn to Page* 207)



New Packer semi-automatic filling machine fills containers in packing cases.

New Case Filler Shown

A new semi-automatic filling machine designated "Model PC-1" and introduced by Packer Machinery Corp., Brooklyn, N. Y., can fill containers while they remain in the packing case.

The machine is capable of filling either four one-gallon, 12 quart, or up to 16 pint containers. Equipped for either gravity or vacuum operation, the filler is equipped with spout assemblies and interchangeable nozzles of stainless steel, clear plastic tubing, and a skate wheel conveyor for moving cases under the spout.

"Model PC-1" is reported to be in use in New York and the mid-west. Complete information is available from the company, 109-14th St., Brooklyn 15 .

Packer brings
AUTOMATIC FILLING
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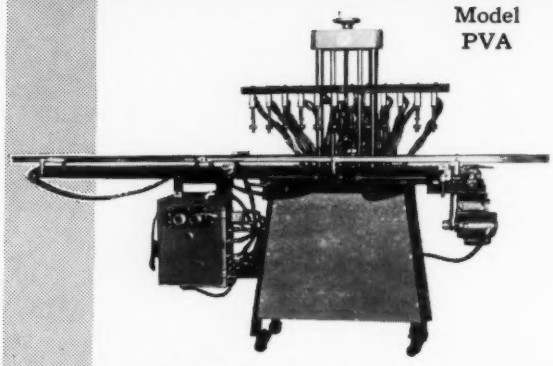
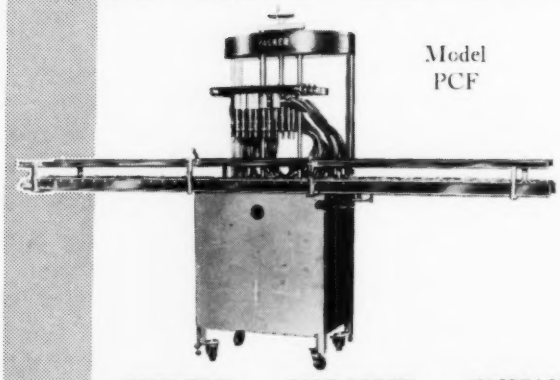
PVA



Packer's Model PVA is a fully automatic, straightline filler . . . So easy to operate that any unskilled person can make the quick changeover from ounces to gallons with on'y a simple adjustment. A touch of the button starts the entire operation.

Packer

Model
PCF



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Fills containers *inside* the carton! Fully adjustable from ½ pint to gallon—for glass, metal and plastic containers. Vacuum. Gravity. Equipped with skate wheel type conveyer for easy handling of cartons.

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the new single substance pressure nozzle method.

Alkyl Aryl Sulfonates

Alkyl aryl sulfonates of the keryl type display good resistance in the hot spray method. However, there are limits to their use for obtaining a high volume by bulk. The keryl type has largely been ousted by alkyl aryl sulfonates of the tetrameric type. They are derived from a propylene gas which is produced in the cracking of petroleum. The tetrameric type has greater wetting and detergent power but lower water solubility. The advantage of the tetrameric type however is easier crystallizability which is important in the production of detergents in powder form. This characteristic permits the proportions of such syndets to be raised considerably, without the bulk weight and the flow properties of the powder being unfavorably influenced. This applies to the old spray method and to the manufacture of powdered detergents on the floor. To raise the bulk volume, the lathering process may be found of service.

Tetrapropylene benzol sulfonate can be used to good advantage in pasty products, where it makes for greater viscosity than the keryl compound when used in the same proportions.

Alkyl sulfonates or paraffin sulfonates are not as resistant to heat as the alkyl aryl sulfonates but yield powders of higher bulk volume than the keryl type.

Fatty Alcohol Sulfates

Alkyl sulfates or fatty alcohol sulfates depend for their heat resistance properties on the type of fatty alcohols on which they are based. Sulfonation of these products is not higher than 90 per cent so that they always contain inter alia a certain proportion of free fatty alcohols, which can be a drawback. For use in synthetic bars they must have the highest possible degree of sulfation and the smallest possible quantity of electrolytes and oils. For the manufacture of powdered detergents preference is given to mixtures of fatty alcohol sulfates. For semi-synthetic toilet soaps, soap needles, etc., uniform alkyl sulfates are usually specially selected for the purpose in hand.

Fatty acid alkylolamides are accepted as lather stabilizers and detergent additives. They must be chosen with an eye to compatibility with other surfactants and with the builders used in the formulation. Fatty acid monoethanolamides are commonly used in powder form detergents and cleansers. The diethanolamides are preferable for pasty and liquid end products.

Fatty acid alkylolamides yield good results with alkyl aryl sulfates and alkyl sulfates, provided they are correctly formulated. They may be combined with non-ionic basic types to make low sudsing washing and rinsing agents, espe-

CaPeM SCREW CAPPERS

Speed production for Texize Chemicals, Inc.

This Model D-6-F Rotary CaPeM increased production to such an extent that Texize Chemicals, Inc., Greenville, S. C. recently ordered a duplicate. This completely automatic line is operated continuously at production rates in excess of 200 bottles per minute.

CaPeM Screw Cappers apply all types of metal and plastic screw caps to jars, bottles, cans and jugs ranging in size from 1 oz. to gallons. Speeds range from 40 to 300 containers per minute. Write for complete information.

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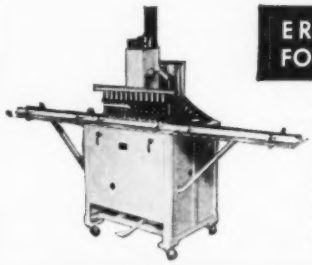
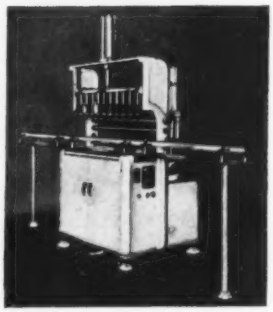


ERTEL ESA FILLER FOR SMALL BOTTLES

The most practical filler for small bottles in quantities of 40 to 60 per minute. To appreciate this unit it should be viewed in operation — the finest low cost trouble-free unit on the market.

ERTEL PNEUMO-VAC FILLER
Filling Range 3" to 13" High Bottle

For speeds up to 40 quarts per minute, this precision Ertel filler has no equal. New type spouts positively prevent drippage. Available with circulatory passages either bronze, plated, or stainless steel. Adjustments are simple and require but a few seconds time. If you have a filling problem see the Pneumo-Vac — it's designed for low cost operation.



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Suitable fatty acid alkylolamides can be used as superfatting agents and to reduce iron corrosive properties of certain detergent combinations.

PRODUCTION Clinic

Tank Car Cleaning

A feature article in a recent issue of "Oakite News Service," a bi-monthly publication of Oakite Products, Inc., New York, is devoted to the interior cleaning operation of what is said to be the largest non-petroleum tank car fleet in the world operated by Archer-Daniels-Midland Co., Minneapolis. The illustrated article describes the work of the Oakite interior tank cleaning unit which is designed to prevent one cargo from contaminating another. The unit is lowered into place and clamped to the tank car dome. A hot detergent solution at about 100 pounds pressure is delivered through the unit's tubular shaft to nozzles inside the tank. As the nozzles rotate on two planes simultaneously, every square inch of the interior is repeatedly covered. Rinsing and drying operations follow.

—★—

New Filling Machine

An automatic straight-line filling, labeling, and crimping machine designed to fill viscous materials in five-gallon open top pails was introduced recently by MRM Co., Inc., Brooklyn, N. Y.

Approximately 20 feet long, the machine employs a double strand chain conveyor with variable control. First stage of the operation is the filling cycle by a series of either two or four air operated nozzles each depositing a partial quantity of material. Safety devices are built in to prevent spillage and overfill. Cut-off is said to be clean with no drippage.

In the second stage, labeling station, operation is activated by the container itself as in the filling stage. After the labels are applied the cans are forwarded to wiping and pressure stations where pads cover about half the side area of the containers. Crimping can covers is the next operation. Covers may be placed on the container either manually or automatically. As the pail arrives in position a crimping head is automatically lowered and crimps the cover onto the can.

The entire unit can be set into overall packaging procedures. According to the manufacturer, it requires only two men for loading and unloading when used separately. Eight to 16 containers can be processed per minute depending upon the number of filling nozzles.

—★—

Rapid M.P. Apparatus

A new melting point apparatus said to combine accuracy and reproducibility of results with speed of operation has just become available from Arthur S. LaPine and Co., 6001 South Knox Avenue, Chicago 29. It is manufactured by W. Buchi in Switzerland.

The small mass of silicone oil heating fluid of low specific gravity used in this apparatus, is a time saving feature both in initial heating for tests, and also between tests because it permits rapid cooling.

Binocular observation and antiglare devices make for easy reading of results. The apparatus costs $290.00. A four page technical information bulletin may be obtained from LaPine.

—★—

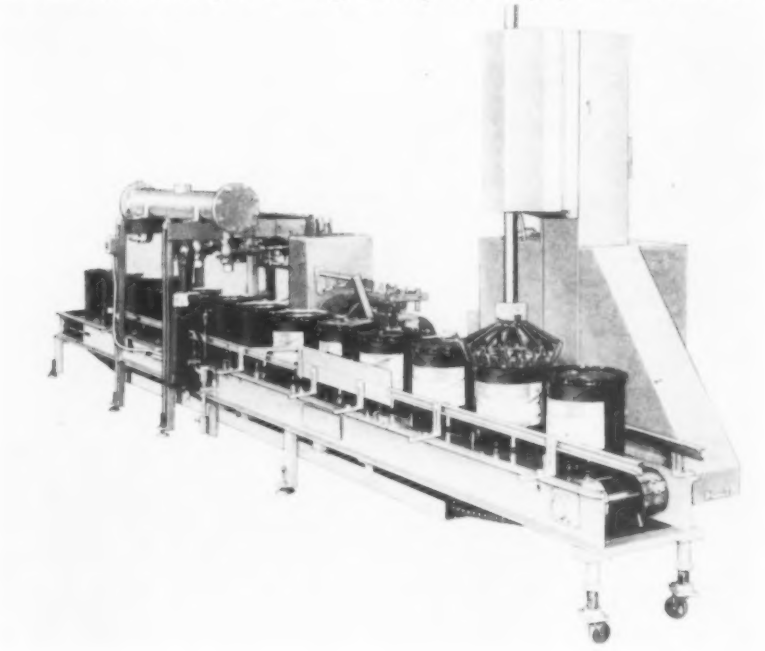
New Fluoro-Alcohols

Experimental quantities of three new fluoroalcohols have just become available from E. I. du Pont de Nemours & Co., Wilmington, Del. Potential uses of the new compounds include the manufacture of surface active agents, nonflammable hydraulic fluids, special lubricants, and other specialties.

The alcohols have a fluorine content varying from 68.6 to 71.4 per cent. Boiling points range from 129 to 181°C at 200 mm pressure. The developmental price of these compounds is $40 a pound.

Information on their properties, reactions, and potential uses is available from the manufacturer.

New automatic straight-line filling, labeling and crimping machine of MRM.



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MODEL B-49 STRAIGHTLINE VACUUM FILLER. Most automatic one-operator multiple filler. With or without discharge conveyor. Contact parts of stainless steel, plastics on order. Adjustable for container sizes from AGST to gallon size finishes. Send for Model No. B-49 Bulletin.

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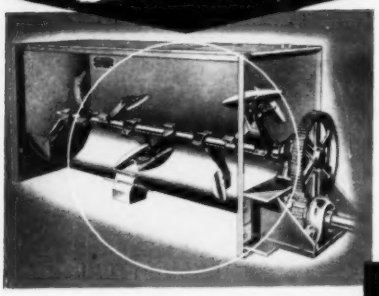

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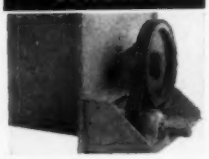

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Manufacturers

NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine:—MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

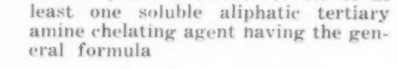
No. 2,851,369. Polishing Composition, patented by Henry C. Geen, Grand Rapids, Mich., assignor to Simoniz Co. This patent describes a thixotropic substantially non-aqueous surface coating composition, consisting essentially of: a liquid phase including a non-aqueous solvent; a wax adapted to be deposited on a surface upon evaporation of the solvent after application of said composition to said surface; and about 0.1-10% by weight of the composition of a compound substantially insoluble at room temperature in said solvent having essentially the formula wherein R is a member of the class consisting of n-octyl and 2-p-tertiarybutylphenoxyethyl groups.

No. 2,853,416. Method of Protecting Plants by Applying a Pesticidal Amount of a Polyvinyl Pyrrolidone-Iodine Adduct, patent by Henry B. Kellog, Terafly, N. J., assignor to General Aniline and Film Corp., New York. Revealed is a method of protecting chlorophyllaceous plant material subject to attack by plant pests which comprises applying to said material a pesticidal amount of polymeric N-vinyl-2-pyrrolidone-iodine adduct containing from 2-25% available iodine and a carrier therefor.

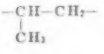
No. 2,856,102. Pressure Dispensing Container, patented by Frederic Remington, Elizabeth, and Richard A. Tartaglia, East Orange, N. J., assignors to Peerless Tube Corp., Bloomfield, N. J. This patent covers a pressure dispensing container comprising a one-piece extruded aluminum main body portion having a cylindrical side wall and an integral bottom wall at one end thereof, the other end of said side wall being drawn into a reduced cylindrical portion of lesser diameter than said main body portion and there being a convexly curved shoulder between said main body portion and said reduced portion that is tapered toward the reduced portion, said reduced cylindrical portion having its outer extremity rolled inwardly into a continuous rigid circumferential bead that is hollow and approximately circular in cross section and in spaced relation to said curved shoulder, a sheet metal top wall having a circumferential flange in fluid-tight relation to said bead to provide a fluid-tight joint between said top wall and said cylindrical reduced portion, and a dispensing valve secured in said top wall within said circumferential flange.

No. 2,856,298. Emulsion Cleaner Composition, patented by Paul C. Watson, North Quincy, Mass., assignor by mesne assignments to E. I. du Pont de Nemours & Co., Wilmington, Del. Described is:

1. An oil in water emulsion composition designed for cleaning and weather conditioning organic automobile finishes, consisting essentially of a water-immiscible oil-phase consisting essentially of about 2-12% of a nonvolatile neutral polishing oil, an aqueous phase consisting essentially of at least 25% of water, about .1-1% of a water-soluble gum of vegetable origin, and about 3-12% of a water-soluble polyhydric alkanol as a humectant; at least 5% of a mild abrasive, and from .2% to 4% of at least one soluble aliphatic tertiary amine chelating agent having the general formula

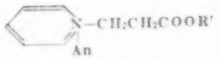


where the substituent M— is a member of the group consisting of hydrogen, alkali metal, ammonium and 1 to 4 carbon alkyl ammonium; the substituents R—, R'— and R"—are each separately members of the group consisting of —CH_2—CH_2OH, —CH_2—$COOM$ and—CH_2—CH_2COOM and may be the same,—A—is a divalent alkylene radical selected from the group consisting of —CH_2—CH_2—CH—CH—CH'— and



and n is an integer in the range 0, 1, 2, 3, 4 said percentages being based on the total weight of the composition.

No. 2,857,310. Quinolinium and Pyridinium Quaternaries, patented by Samuel Allen Heininger, Dayton O., assignor to Monsanto Chemical Co., St. Louis, Mo. Covered are quaternary salts selected from the class consisting of compounds of the formulas



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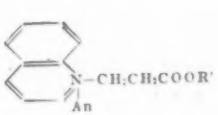
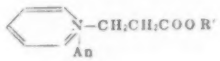


where R' is an alkyl radical containing from 4 to 18 carbon atoms and An is an anion selected from the class consisting of chlorine and bromine.

The method of killing insects which comprises contacting said insects with a lethal concentration of a quaternary salt selected from the class consisting of compounds of the formulas



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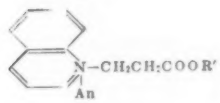

where R' is an alkyl radical containing from 4 to 18 carbon atoms, and An is an anion selected from the class consisting of chlorine and bromine.

No. 2,856,297. Polishing Composition, patented by Henry C. Geen, Grand Rapids, Mich., assignor to Simoniz Co. This invention consists of an aerosol type wax-free polishing composition adapted to be dispersed onto a surface from a container in which said composition is retained under superatmospheric pressure, consisting essentially of: about 0.5 part of lauric isopropanolamide; about 25 parts of methylene chloride; about 25 parts of trichloromonofluoromethane; about 50 parts of dichlorodifluoromethane; and about 2 parts of dimethylpolysiloxane, all said parts being by weight of said composition.

No. 2,585,053. Dispensing Device, patented by Wilhelm Waldherr, Mannheim, Germany. This patent covers a dispensing device comprising, in combination, a container adapted to hold a fluid under pressure, said container having an open top; cap means engaging said open top of said container to close the same and having in its interior a metering chamber, said cap means having a tubular open bottom end portion extending into and communicating with the interior of said container; a plurality of coaxial sealing rings carried by said cap means coaxially with said tubular end portion thereof and axially spaced from each other; an elongated tube having opposite open ends and formed intermediate said ends with a transverse wall, said tube having a pair of wall portions respectively located on opposite sides of said transverse wall and respectively formed with openings, said tube extending through and being slidably guided by said sealing rings for movement between one end position where one of said tube openings is closed by one of said sealing rings and the other of said openings is located in said metering chamber to provide communication between the latter and a first interior portion of said tube on one side of said transverse wall thereof and an opposite end position where said other openings is closed by another of said sealing rings and said one opening communicates with said metering chamber to place a second interior portion of said tube on the other side of said transverse wall in communication with the interior of said container and said metering chamber.

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Triethanolamine is used to make lauryl sulfate salt which is an active ingredient in some of the liquid shampoos.

You can look to Jefferson as a reliable source of regular and 99% purity triethanolamine and technical help in their application. For complete information, write: **Jefferson Chemical Company, Inc., 1121 Walker Avenue, Houston 2, Texas.**

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Book Reviews

Big Molecules and Their Applications

"The bricks for building big molecules are relatively small in number, carbon, hydrogen, oxygen, nitrogen, sulfur, chloride, fluorine and silicon, but these eight of the 100 known chemical elements are sufficient to build up most complex structures, which, when made into various materials, can perform a great variety of roles. The rules are so simple, that it is literally possible to use spherical balls to represent the various atoms and to join them together with rigid mechanical links to give a very good approximation of the actual shape of the molecules comprising these materials."

The above paragraph is a sample of the comforting lucidity which distinguishes a small and highly informative book on "Big Molecules," by Sir Harry Melville, published last month by Macmillan Co., New York.* The lucidity stems from the author's complete control of his subject. He can dispense with all but the heart of the matter. Sir Harry Melville has taught at the universities of Aberdeen and Birmingham, is secretary to the committee on Scientific and Industrial Research of the Queen's Privy Council.

Methods for making big molecules are outlined and different ways to measure their size are described. The third chapter dealing with fibres includes a brief outline of the principles underlying treatments for crease resistance, water repellency and fire resistance. Rubber and plastics are covered in separate chapters. The last chapter is entitled "Polymers" and covers among other polymeric substances and their special uses the silicones, PVP, ion exchange resins, etc.

Anyone wishing to learn about the relatively new field of big molecules and their role in our daily lives will derive pleasure and profit from this little book.

*Cloth bound, 180 pages, five by seven and one half inches, price $3.95.

—★—

New D&O Catalog

A 36-page price list and catalog has been published by Dodge & Olcott, Inc., 180 Varick St., New York 14. Published semi-annually, the booklet contains price listings, descriptions, and market information on the essential oils, aromatic chemicals, certified colors, and other specialties produced by the company.

—★—

EDTA Analytical Uses

A bibliography of analytical uses of ethylene diamine tetra-acetic acid has just been published by Geigy Co., Ltd., Rhodes, Middleton, Manchester, England. Literature published up to the beginning of 1958 in most countries of the world is covered in 1091 references. A cross index by subject matter is appended.

FDA on Detergents

(*From Page* 57)

moting attractiveness, or altering the appearance, and articles intended for use as a component of any such article; except that such term shall not include soap."

Question 7: "What is the FDA's answer to the soap and detergent industry's feeling that 'the law has failed to keep up with technological advances in the industry'?"

Answer: "We cannot comment on your suggestion that the law has failed to keep up with technological advances in the industry. In 1938 the Congress saw fit to exempt soap from the provisions of the cosmetics section of the Act and did not exempt any other products which are covered by the above-quoted definition. The exemption of soap on the grounds that its characteristics and uses are such as to present no need for controls such as are provided for by the law would not imply that some other cleansing agent not soap should also be exempted."

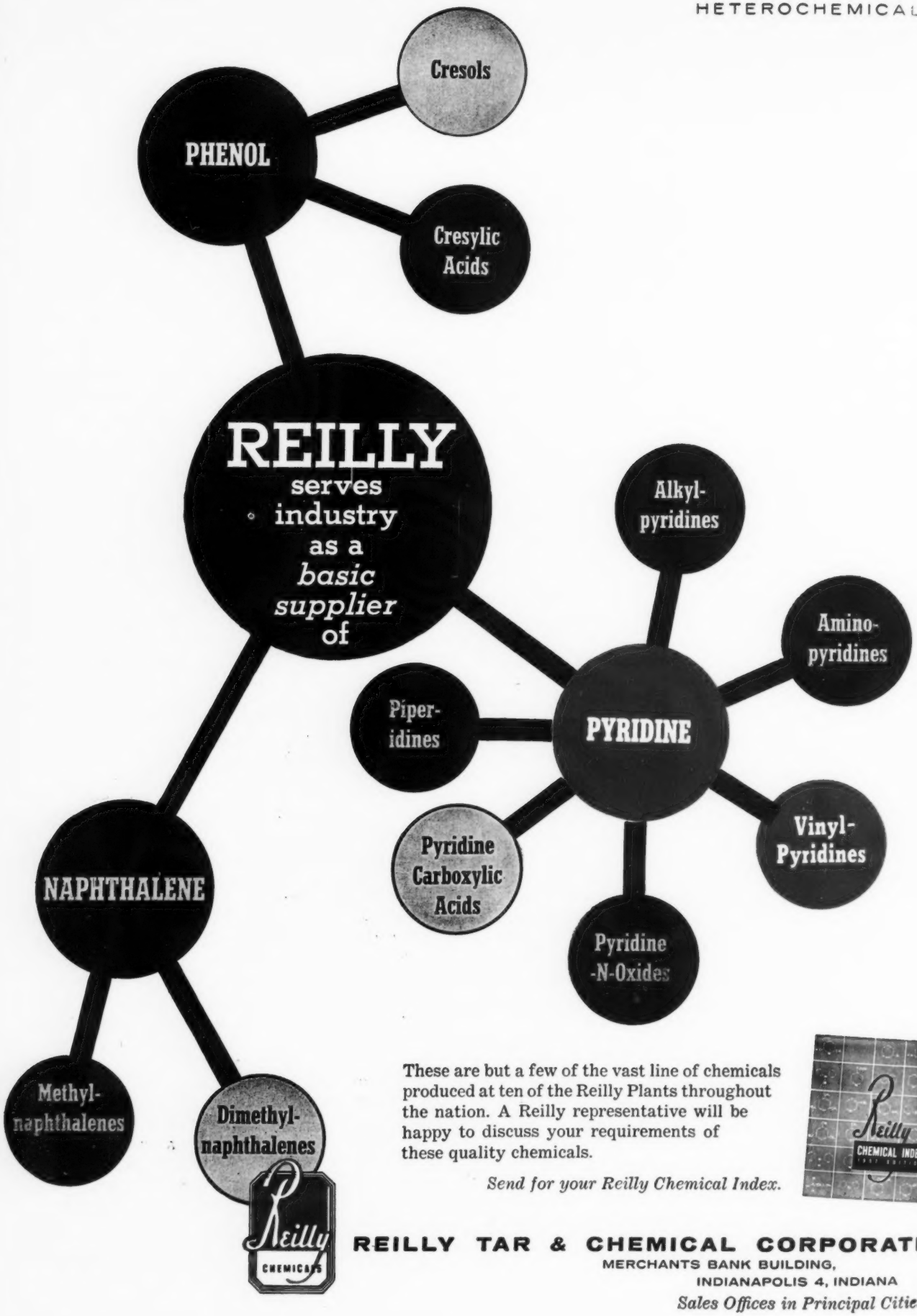
Question 8: "Will the 10 per cent tax on cosmetics apply to products brought under the Act by the Sept. 26th ruling of FDA?"

Answer: "The application of excise tax to cosmetics is a matter outside the jurisdiction of the Food and Drug Administration. The classifications set up by Congress in the Food, Drug, and Cosmetic Act do not necessarily apply under the tax law. The opinion expressed by us on September 26, 1958, does not change the law."

Question 9: "Since so-called detergent bars by their very nature are apt to change weight from the time of their manufacture until they are sold or used, can the weight statement be construed to mean weight at time of manufacture, sales, or when?"

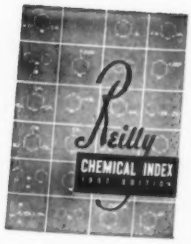
Answer: "Many products subject to the Food, Drug, and Cosmetic Act are subject to decrease in weight due to loss of moisture. Due allowance must be made for shrinkage that occurs after the product has been introduced into interstate commerce."

Mr. Harvey's letter concludes: "In conclusion, it would appear that the misunderstandings that have arisen with regard to our statement of interpretation are due to the fact that this has been assumed to be some kind of a ruling which changed the law, rather than a mere statement of our interpretation which is simply to the effect that whereas soap is exempt, a product which is not soap, which is otherwise subject to the definition of cosmetics, is not exempt. The essential effect on the detergent bar of the definition of cosmetics under the law is to require the labeling requirements set forth in the section designated Chapter IV in the law and to apply adulteration provisions with regard to dangerous cosmetics to detergent bars."



These are but a few of the vast line of chemicals produced at ten of the Reilly Plants throughout the nation. A Reilly representative will be happy to discuss your requirements of these quality chemicals.

Send for your Reilly Chemical Index.



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Products and PROCESSES

New Alkyl Aryl Sulfonate

A new form of dodecyl benzene sulfonic acid with low free sulfonic acid content has just been placed on the market by Krystall Chemical Co., 2108 North Southport Ave., Chicago. Designed for incorporation in liquid detergents the product is designated "Kristallex SX."

The material can be neutralized with a wide range of alkalies and amines to yield a light oil-in-water soluble sulfonate, said to be free from objectionable odors. In addition to versatility the manufacturer claims economy in formulation for his product.

"Krystallex SX" contains 92.0 minimum active sulfonic acid, 1.5 maximum free sulfuric acid, 1.5 maximum free oil, and 5.0 maximum moisture.

★

Shampoo Formulation

Shampoos manufactured cold from "Texapon Q" sodium lauryl ether sulfate and "Comperlan KD" diethanolamide of coconut oil fatty acids is the subject of a recent technical news letter from Dehydag, Deutsche Hydrierwerke G.m.b.H., Duesseldorf, Germany. In the United States, Dehydag products are distributed exclusively by Fallek Products Co., 165 Broadway, New York.

"Comperlan KD" added to shampoo formulations acts as an emulsifier, detergency booster, and viscosity builder.

"Texapon Q" contains 28 per cent active ingredient, has a viscosity of about 400 cP/68°F, good detergent, soil carrying, and cutaneous properties. The following viscosity effects can be obtained:

"Texapon Q"	Water	"Comperlan KD"	Viscosity cP/68°F
20	80	—	about 1
20	74	6	1500
30	64	6	2300
40	54	6	8000
50	44	6	19000

A solution is prepared of "Comperlan KD" in "Texapon Q" which is then diluted with the correct amount of water. The above parts per weight ratios can be varied according to individual requirements.

★

Emulsol Products Data

A four page technical bulletin describing "Emcol P10-49" was published recently by Emulsol Chemical Corp., Division of Witco Chemical Co., 75 East Wacker Drive, Chicago 1. High water solubility and detergency are claimed for this alkyl aryl sulfonate, which is compatible with acid and alkali builders. Formulations built with phosphates, silicates, phosphoric acid, etc., can be based on the following formulas:

Liquid Dishwashing Concentrate	weight per cent
"Emcol P10-49"	50.0
"Emcol 5139P" (alkanolamine condensate)	4.6
Water	45.4
	100.0

Heavy Duty Cleaner	
Sodium tripolyphosphate	3.0
"Emcol P10-49"	3.5
"Emcol 5137"	5.5
Water	88.0
	100.0

Liquid White Wall Tire Cleaner	
"Emcol P10-49"	1.0
"Emcol 5130"	7.0
Trisodium phosphate	4.0
Water	88.0
	100.0

Different "Emcol 5000" nonionics are added for tailor-made viscosity and foaming characteristics. Alkaline builders must be selected according to the intended end use of the product; high pH builders for heavy duty, lower pH builders for light duty cleaners. Compounding directions are included in the bulletin.

★

"Lanamine" Data Revised

"Lanamine" in shampoos and shaving soaps is the subject of a revised product bulletin published last month by Robinson Wagner Co., 628 Waverly Avenue, Mamaroneck, N. Y. Described as a substituted alkyl amine of selected lanolic acids the product comes as a transparent gel of lanolin odor and lanolin color. It is an anionic surfactant of prolific foaming power, good detergency and good cutaneous properties, according to the manufacturer.

To form a clear gel, 63 to 90 parts of "Lanamine" are used with 10 to 37 parts water; for a clear liquid 15 to 60 parts of "Lanamine" with 40 to 85 parts of water. These basic mixtures are prepared at 140°F. Two modified shampoo formulations are suggested:

	Clear Gel	Clear Liquid
"Lanamine"	65	18
"Lanogel" #41* (water soluble lanolin)	1	1
"Duponol XL"** (fatty alcohol sulfate)	26	30
"Ninol AA62"*** (nonionic)	8	2
Water		49

*Robinson Wagner Co.; **E. I. du Pont de Nemours & Co.; ***Stepan Chemical Co.

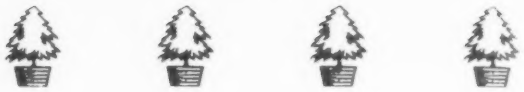
The bulletin gives specifications of "Lanamine" and other pertinent information.

★

Household Soap Making

How to make pure plodded household soap with a fatty acid content of 62 per cent is described in the July/August issue of the *Alchemist*, external house organ of N. V. Sluys Boechout, Boechout, Belgium. The method featured has been developed by Mecchaniche Moderne, Busto Arsizio, Italy.

SEASON'S GREETINGS



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SOAP PLANT *Observer*

By John W. McCutcheon
Consulting Chemist

A FASCINATING subject was opened in an article entitled "Detergents by Nuclear Process" which appeared in the October issue of *Soap & Chemical Specialties*. The paper authored by James F. Black and Edmund F. Baxter, Jr., of Esso Research and Engineering Co., Linden, N. J., had first been presented at the United Nations International Conference on Peaceful Uses of Atomic Energy, Geneva, Switzerland, Sept. 1958.

The topic is eye catching just as fluorination type detergents were eye catching several years ago. It deserves very close study by all concerned, although the average chemist will find it hard to translate the terminology used into useful information, chiefly because he does not generally deal with radiation methods.

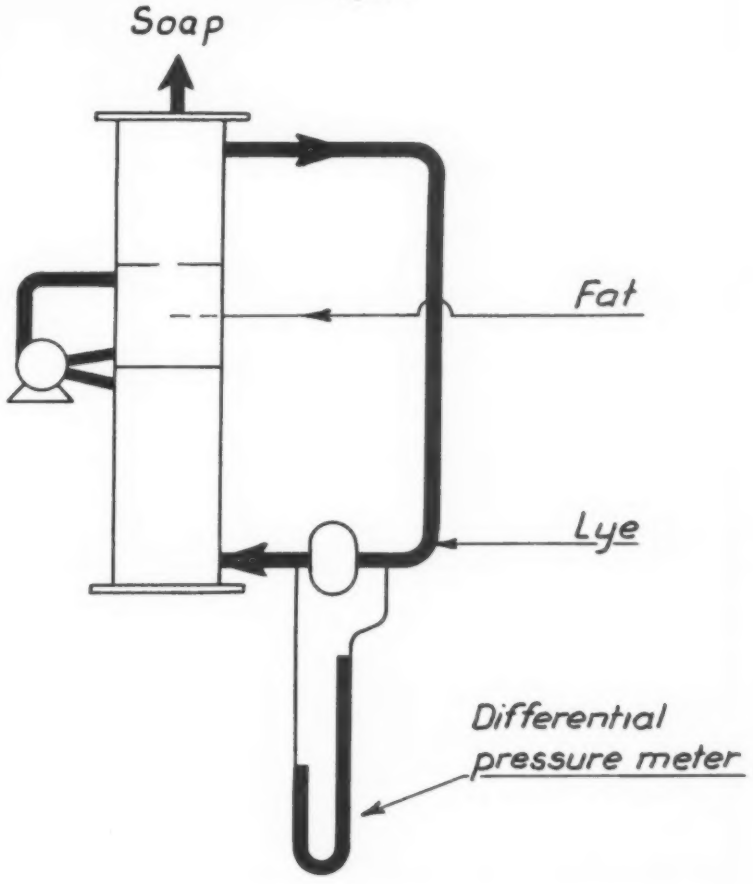
In the first place, this paper is important because it deals, for the first time, to the writer's knowledge, with a useful chemical reaction being promoted by means of atomic energy. Generally, radiation energy destroys by breaking down organic compounds.

Last summer the writer had occasion to visit Brookhaven atomic plant. One point of interest noted was the activation and storage of cobalt 60 as a source of gamma rays. The cobalt is first exposed in the atomic pile in the form of slabs, rods, etc. It is then submerged in a tank of water. The water layer shields the observer from dangerous radiation. When the tank room is darkened, the cobalt glows with a bluish light which illuminates the whole room with a pale glow. The half life of cobalt 60 is about two years, which means that the intensity of the gamma rays decreases one half in that period of time. In four years they would be only one quarter as strong.

In the article under discussion, it is shown that pure hydrocarbons are produced as well, up to molecular weights of 1000. Ultra violet light has similar effects and the Reed process using SO_2 and Cl_2 can also produce petroleum sulfonates. This last method is at present being used in a small way by E. I. du Pont de Nemours & Co. The reason it never became a popular type reaction was due chiefly to the fact that petroleum sulfonates do not have great hard water stability

It is unlikely that the use of gamma rays would yield better products than the Reed process or ultra violet irradiation. In addition, with the gamma ray process, the formation of polymers would have to be eliminated or controlled. These remarks are not intended to detract in any way from the important work disclosed in this paper, but the secondary title used would have directed attention

Figure 1



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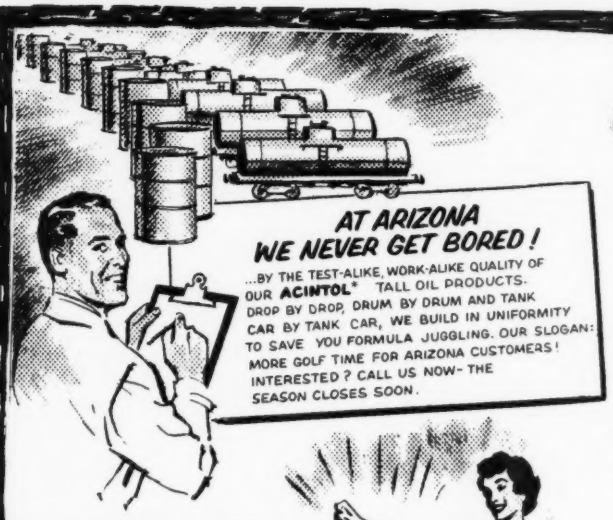

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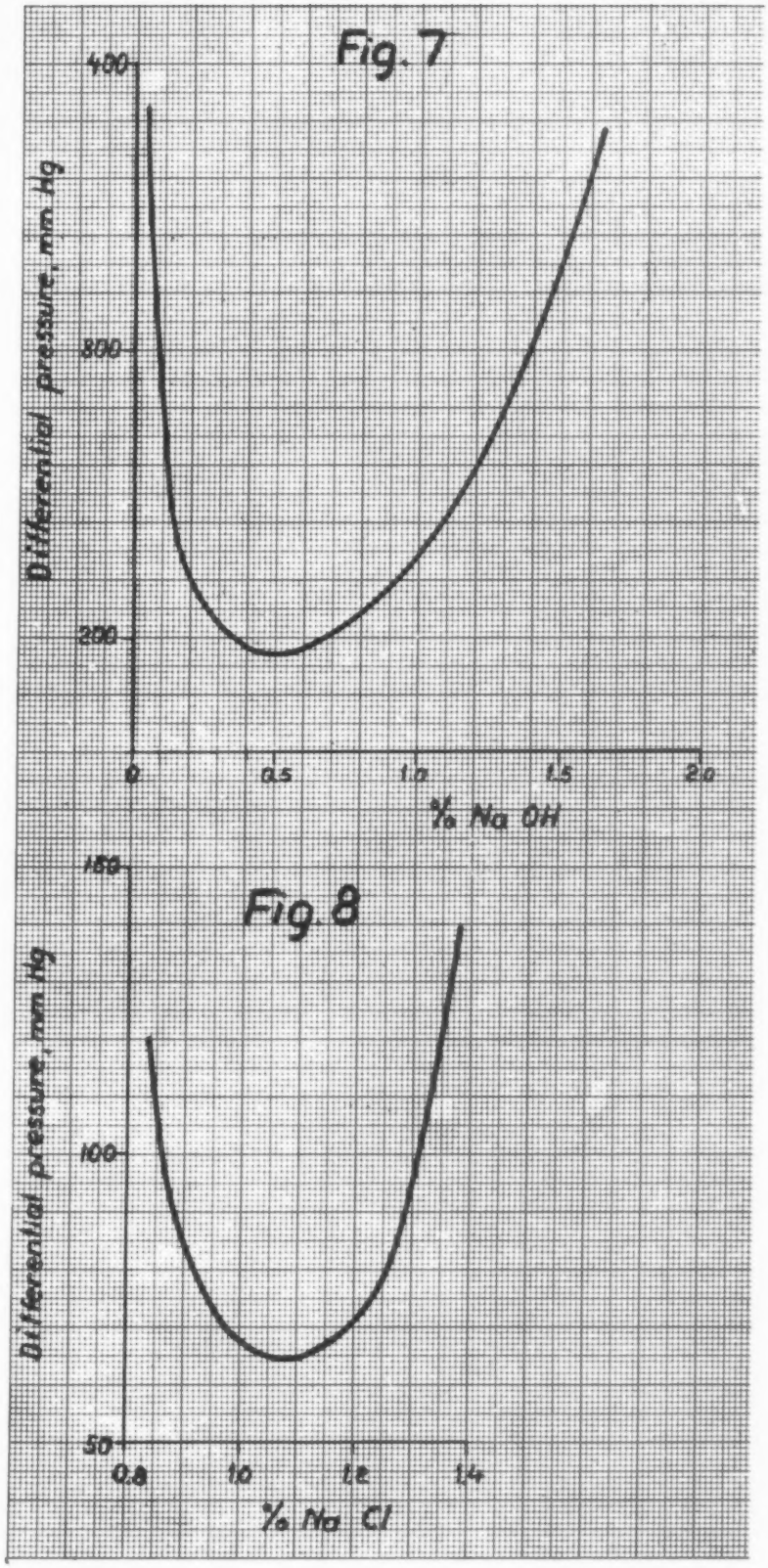
better to those most interested in the work.

AT the fall Oil Chemist's Convention in Chicago, Frank E. Sullivan, De Laval Separator Company, Poughkeepsie, New York, presented a paper on "A New Approach in Continuous Soap-Making — Constant Composition Control." Unlike the Mazzoni process discussed in this column in November, the De Laval process is very similar in principle to the Sharples process but differs from the latter by being totally enclosed and controlled by a unique system which should be of great interest to automation engineers. The method itself has been described fully elsewhere. (Revolution in Soap — S. Mattsson, *Industria*, March, 1956, Sweden; The De Laval Soap Process, *Soap, Perfumery & Cosmetics*, May, 1957; and Technical Bulletin No. 5404E second revised edition, De Laval Co.)

In the De Laval process, fat and lye are brought together in correct proportions in a reaction chamber through which soap is being pumped. A portion of the product, over 99.8% saponified, passes through a further series of reactors and centrifuges designed to wash, grain, and fit the soap to its final form. The recirculating pump on the first stage saponifying reactor is fitted with a differential pressure meter across the intake and output sides of the pump. This pressure is dependent on the product viscosity which in turn is very sensitive to alkalinity. Figure 1. illustrates this set-up; figure 7 shows the graph of pressure versus alkali present in the mixture. By controlling the alkali feed through differential pressure change, the percentage of free alkali in the final step can be held to within plus or minus 0.01 per cent, which is very satisfactory. Subsequent controls on fitting and graining operations are held to close tolerances by similar pressure – composition relations. The diagram, for example, for salt is shown in Figure 8.★★



NEW kid glove treatment helps our hottest bomber keep cool

Special polish with low-abrasive Celite guards the B-58's sensitive skin

Now J-M Celite* has a national defense assignment—helping our newest A-bomber, the Convair B-58 "Hustler," run at supersonic speeds!

Everything about this high-performance aircraft, right down to its gleaming metal skin, says "speed." This high-luster, low-friction surface has been called one of the most vital achievements in modern aircraft development.

To maintain this precision skin—without damaging or scratching the special metal alloys—Convair has specified a new polish-cleaner called *Once!*.† The only abrasive in *Once!* is Snow-Floss, a unique polishing grade of Celite. Because of the porous, thin-walled structure of its diatomite particles, *Snow-Floss never scratches.* Each particle collapses like a microscopic buffer, removing foreign matter and maintaining a precision smoothness that lasts.

Snow-Floss provides easier application and rub-off, too. Highly absorptive, it soaks up and retains dirt and grease films that would otherwise resist rub-off and reduce sheen. This explains why it has gained acceptance as the major abrasive in all types of polishes.

Snow-Floss and the other Johns-Manville Celite grades produced for polishes are carefully controlled from bag to bag. Find out which fits your needs . . . call your nearby Celite engineer or write direct. Johns-Manville, Box 14, New York 16, N.Y. In Canada, Port Credit, Ont.

*Celite is Johns-Manville's registered trade mark for its diatomaceous silica products.
†*Once!* is a registered trade mark of the American Silicone Company, Englewood, Colorado.

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News...

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Oleson Wrisley Chairman

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Jergens Advances Meeker

• • •

New Soap Minimum Wage

• • •

Bottner Heads Knomark

Lewis R. Schilling has just become president of Gerson-Stewart Corp., chemical specialties firm he acquired recently. See details on page 229.

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News

Meeker Jergens Vice-Pres.

Franklin G. Meeker has been appointed executive vice-president of Andrew Jergens Co., Cincinnati,

Franklin G. Meeker

it was announced recently by Andrew Jergens, president. He succeeds joseph D. Nelson who retired Dec. 1st after 54 years with the company.

Previously vice-president in charge of sales since 1949, Mr. Meeker joined the firm 21 years ago. He also was in charge of Jergens' Belleville, N. J., branch plant.

Mr. Nelson started with Jergens in 1904 as an office boy. Working in all phases of the business he rose to become manager of the company's west coast division in 1921 and became executive vice-president in 1940.

—★—

USDA Clears Crag Product

"Crag" fly repellent made by Crag Agricultural Chemicals, New York, has been cleared by the United States Department of Agriculture as an ingredient for livestock spray formulations on a "no residue" basis, it was announced recently by Union Carbide Chemicals Co., New York.

The repellent can be used on both dairy and beef cattle, according to R. H. Wellmann, manager of Crag. Formulators who use the product may now assume that their sprays will be acceptable for registration under the Federal Insecticide Act, Dr. Wellman stated. The product is reported to be effective against horse flies, stable flies, horn flies, house flies, mosquitoes, and gnats.

—★—

New Soap Wage Rate

The minimum wage in the soap industry is now $1.50 an hour. The new wage rate, which applies to employees working on government supply contracts in excess of $10,000, went into effect Dec. 8. The previous hourly wage rate was $1.00.

The amended determination, announced last month by Secretary of Labor James P. Mitchell makes final the proposed determination of July 15. The full text of the proposed determination was published in the August issue of *Soap & Chemical Specialties*. The determinations were made in accordance with provisions of the Walsh-Healey Public Contracts Act.

—★—

Lee Callans Dies

Lee D. Callans, 47, a sales manager for General Chemical Division of Allied Chemical Corp., New York, died of cancer at Washington (D. C.) Hospital Center on Nov. 23.

With Allied since 1950, Mr. Callans had headed sales of the company's "Genetron" propellants to the aerosol industry for the past four years. Previously he had served as an executive assistant and as a sales and technical specialist in the offices of the vice-president and director of operations.

Mr. Callans also had been associated with Antara chemicals sales division of General Aniline & Film Corp., New York, Hercules Powder Co., Hopewell, Va., and Holden Vale Manufacturing Co., Lancashire, England.

McLaughlin Elects Clark

Carroll A. Clark was elected last month president and George A. McLaughlin was advanced to

Carroll A. Clark

chairman of the board of McLaughlin Gormley King Co., Minneapolis.

Mr. Laughlin, who had been president, continues as chief executive officer and treasurer.

With the company since 1932, Mr. Clark directs all phases of the firm's operations in his new post. His first position with McLaughlin Gormley King was as a chemical engineer and he became vice-president and general manager in 1947. Mr. Clark continues as president of the company's wholly-owned subsidiary, McLaughlin Farm Chemicals, Inc., a position he has held since 1953.

The company also announced that its sales and profits for the year ended Sept. 30 were "up substantially" over 1957.

—★—

Shulton Buys in L. A.

Shulton, Inc., Clifton, N. J., recently purchased a 35,000 square foot industrial building at 5431 W. 104th St., Los Angeles. The cost was put at more than $300,000. The building, of concrete tilt-up construction, is located in the city's international airport manufacturing area.

DuBois Dedicates New E. Rutherford Plant

THE formal dedication of the newly opened eastern manufacturing plant of DuBois Co., Cincinnati, in East Rutherford, N. J., took place Nov. 5. Highlight of the dedication ceremonies was the presentation by employees of a bronze plaque of the late T. V. DuBois, founder and for 37 years president of the company until his death in November, 1957.

The 53,022 square foot plant, costing over one million dollars, is located at Union Ave. and DuBois St., just off Highway 17 in the new East Rutherford Industrial Park. An example of contemporary industrial architecture, it is equipped with specifically designed automatic blending and filling equipment to turn out many of the 75 various cleaning products made by DuBois for restaurants, hotels, hospitals and industry and for general industrial processing and maintenance cleaning.

At the dedication ceremonies, which were presided over by Louis Lerner, executive vice-president of DuBois, Mr. Lerner said the "plant . . . was T. V. DuBois' dream." He said "the building is a tribute to the capabilities and leadership of Mr. DuBois—"the man who pioneered this company from a humble beginning of a one man company to a national organization of approximately 800 employees from coast to coast with four manufacturing plants . . . "

In addition to Mr. Lerner, other speakers included East Rutherford Mayor Henry Helstoski and Henry Bector, vice-president of Becton Dickinson Co.

George Barnard, general manager of the East Rutherford plant, who was chosen to represent all the employees then presented the plaque to Mrs. T. V. DuBois.

Charles A. DuBois, son of the founder of the company, and president, on behalf of his mother and himself, thanked Mr. Barnard and all the employees for the plaque. He said he was "thankful and proud to be here and to be able to continue the DuBois name in the company."

Following the dedication ceremonies, which were attended by over 300 persons, visitors toured the plant and attended an open house party in the general offices.

Another new DuBois plant, a one and one-half story manufacturing facility is now being built in Dallas. The new plant will replace the present factory at 1640 South Fitzhugh Ave. Located on Central Expressway, south of Loop 12, the new Dallas facility will provide 30,000 square feet of plant, office and laboratory space. The building is served by a four car rail siding and has a six truck loading dock.

Bankruptcy Hearing Put Off

A hearing in the case of the bankrupt chemical specialties firm, Re-Mark Chemical Co., Miami, Fla., was scheduled for Nov. 14 in the Southern District Federal Court, Miami, but was again postponed. Re-Mark, manufacturers of detergents, household insecticides, chlorine products, etc., as well as agricultural chemicals, was adjudged bankrupt in April, 1958. David Marks is president of the firm which is presently being operated under a trusteeship. It is reported that there are liabilities of about $2,000,000 as compared with assets of approximately $200,000 also that the firm had outstanding 380,000 shares of stock with a par value of $100. It is understood that two groups are in-

Charles A. DuBois, president of DuBois Co., and son of its founder and late president, looks over bronze plaque presented to the company by the employees in memory of T. V. DuBois. Mrs. T. V. DuBois, widow of the founder and Mrs. Charles A. DuBois read the plaque, which was presented during dedication ceremonies of the new DuBois plant (below), in East Rutherford, N. J., Nov. 5.

terested in getting control of the firm, one, another manufacturer of related products, the other a local stockholders group.

★

"Tried for Desertion!"

J. Malcolm Miller, administrative manager of the Association of American Soap & Glycerine Producers, who retired November 1 to his 500 acre farm at Salem, Arkansas, to raise beef cattle, was given a surprise farewell party by the staff of the Association on November 13 at the Champs-Elysees Restaurant, New York. He was presented with a Hamilton "Thin Line" wrist watch by the staff engraved "With affection to J. Malcolm Miller from all his friends at the Soap Association, 1933-1958." This happened to be the first watch of this model put out by the Hamilton factory. Miss Ruth Goldberg of the association's Cleanliness Bureau made the presentation.

Following dinner, a surprise skit was put on entitled "Tried for Desertion' in which Mr. Miller was the defendant. Roy Peet, manager of the Association, acted as judge, Scott Pattison as prosecuting attorney and Elton Lewis, Mr. Miller's successor, as defense attorney. Mr. Miller was "convicted" and sentenced to life "on a sunny farm in Arkansas to take his ease and raise cattle." At the close of the party, Mr. Miller was presented with small gifts, all suitable for a farmer, by members of the Association staff.

The Miller "caravan" consisting of two cars and a truck left Tarrytown, N. Y., his former home, for Arkansas on November 15. He was accompanied by Mrs. Miller and his son, a recent Cornell graduate in animal husbandry.

★

Adds Bleaching Agent

A new optical bleaching agent in the fluorescor line called "Cellu-Brite D" has been added by Carlisle Chemical Works, Inc., Reading, O. Substantive to cotton, linen, wood pulp, and cellulose type fibers, the product is said to readily disperse in aqueous systems and is easily applied from these systems.

Carlisle claims "Cellu-Brite D" gives added whiteness to high grade papers and improves results obtained with liquid starches, liquid detergents, and textile finishing compounds.

A data sheet and laboratory sample of the product is available from the company.

★

New Hoechst Distributor

"Hoechst" waxes, formerly distributed in this country by Wax & Rosin Products, New York, are now being handled on an exclusive basis by the newly formed Hostawax Co. The new arrangement became effective December 1. Wax & Rosin's agency was terminated after the death of its head and cofounder Bruno Young, Oct. 16.

Hostawax Co. is a division of Progressive Color and Chemical Co., 350 Fifth Avenue, New York 1, an American affiliate of Farbwerke Hoechst, A.G., Frankfurt am Main, Germany, manufacturer of the waxes. Formation of the new company and its function were announced by H. E. Maurer, president of Progressive Color.

Roy W. Peet, manager of the Association of American Soap & Glycerine Producers, in photo above, is shown addressing the opening general session of the Sanitation Management Conference in New York, Nov. 3. The Conference was held in connection with the annual meeting and trade show of the Institute of Sanitation Management, Nov. 3-6. Some 60 firms displayed chemical specialties and equipment for cleaning and maintenance at the show.

New ISM president, Edwin S. Doyle, sanitarian for National Canners Association western research laboratory, Berkeley, Calif., is shown at right.

Kurt J. Wasserman, formerly technical director of Wax & Rosin Products, has joined Hostawax, which will maintain a technical service laboratory for the benefit of its customers.

★

Pliny Boyd Dies

Pliny A. Boyd, retired president of Everett & Baron, Providence, polish manufacturers, died Nov. 21 in Orange (N. J.) Memorial Hospital after a long illness. Upon his retirement in 1953, Mr. Boyd had moved to St. Petersburg, Fla., from Bloomfield, N. J. He is survived by his widow, Isabel, two daughters, and a son.

★

Felton Names Kazanjian

Dicran P. Kazanjian recently was appointed purchasing agent for Felton Chemical Co., Brooklyn. With the firm for 18 years, Mr. Kazanjian was previously assistant purchasing agent. He also served successively as plant engineer, assistant to the plant superintendent, and process and development engineer.

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Nopco Elects McClellan

Robert F. McClellan last month was elected vice-president of Nopco Chemical Co., Newark, N. J., and has been appointed general sales manager of its industrial division. In his new post he supervises sales activities of departments serving the detergent, insecticide, and other industries.

Formerly vice-president of Nopco Chemical Canada, Ltd., Mr. McClellan joined the firm 31 years ago as a salesman for the agricultural division in Chicago. He transferred to the industrial division in 1928 and was appointed midwest district manager in 1944. Nine years later he became head of Nopco's Canadian division, the former Yocum-Faust Chemical Co., London, Ontario.

★

Bottner Heads Knomark

Irving J. Bottner has been advanced to the presidency of Knomark Co., Brooklyn, N. Y., it was announced recently by Charles Revson, president of Revlon, Inc., New York. Knomark, manufacturer of "Esquire" boot polish and other shoe polish products, is a wholly-owned subsidiary of Revlon.

Mr. Bottner has been vice-president and treasurer of Revlon since 1956 and prior to that was vice-president and treasurer of Lewyt Corp. He succeeds Albert Abrams who, with his brother Sam, founded Knomark. Revlon purchased Knomark in November, 1957.

Irving J. Bottner

Eugene F. Bertrand

Oleson Wrisley Chairman

The appointment of Wrisley B. Oleson as chairman of the board of Allen B. Wrisley Co., Chicago, was announced last month jointly by Alan G. Stoneman, president of Purex Corp., Ltd., South Gate, Calif., and Mr. Oleson. Wrisley is a subsidiary of Purex.

Mr. Oleson previously was president of Wrisley and is succeeded in that position by Eugene F. Bertrand, former sales manager of the drug and chemical divisions of Owens-Illinois Glass Co., Toledo, O. Mr. Bertrand also becomes director of sales and has been elected a vice-president of Purex.

★

Borax Ups Production

United States Borax and Chemical Corp., Los Angeles, is planning to increase production of boric acid at its Pacific Coast Borax Co. division in Wilmington, Cal.

The planned increase is brought about because of the increased damand for the product in many industries including the imminent requirements of boron fuel manufacturers, according to J. F. Corkill, vice-president and general manager of the division.

★

Tyre Soap Moves

The plant and offices of E. P. Tyre Soap Co., Milwaukee, Wis., have been moved to new and larger quarters at 1243 N. 5th St. in that city, it was announced recently by the company. Previously the firm was located at 1821 N. 3rd St., in Milwaukee.

SAACI Party Set

The annual Christmas party ("Winter Carnival") of the Salesman's Association of the American Chemical Industry, will be held Wednesday evening, Dec. 17, at the Waldorf Astoria Hotel in New York, it was announced last month by Paul E. McCoy of American Potash & Chemical Corp. and chairman of the association's entertainment committee.

The gathering begins with a cocktail party from 5:45 p.m. to 7:15 p.m. with dinner starting immediately afterward. Entertainment is scheduled to begin at 8:45 p.m.

Distribution of the SAACI publication "Peddler" and more door prizes than before have been arranged for the party, according to Mr. McCoy.

★

Johnson Names Farley

Raymond F. Farley has been appointed manager of the newly formed "Porelon" enterprise of S. C. Johnson & Son, Inc., Racine, Wis., it was announced last month by S. C. Johnson, vice-president of the service products division.

Previously metal working products sales manager, Mr. Farley now directs the sales development of "Porelon," a new synthetic material said to have a sponge-like consistency.

Also named to the staff of the new enterprise are A. J. Langlois and D. R. Baker as market development engineers.

Raymond F. Farley

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In South America: Atlantic Refining Company of Brazil, Rio de Janeiro

Acquires Gerson-Stewart

Lewis R. Schilling, founder and former president of the Kolcast industries division of Thompson Products, Inc., Cleveland, purchased last month all outstanding stock of Gerson-Stewart Corp., also of Cleveland, and manufacturing chemists and a supplier of cleaning compounds, sanitation chemicals and floor preservatives for industrial, institutional, and commercial use. The firm, founded in 1914 by the late Larry Gerson, has over 100,000 square feet of manufacturing space and research and testing facilities.

Mr. Schilling serves as president and general manager succeeding Walter Haas, who has resigned. Mrs. Larry Gerson, widow of the founder, who was secretary-treasurer of the company, also has resigned.

The firm, which sells through sanitary supply jobbers to some extent, according to Mr. Schilling, accounts for most of its sales through direct salesman. Immediately after the purchase, Mr. Schilling announced the implementation of an expanded sales program including the appointment of Francis M. Mansbery as sales manager, a doubling of the sales staff within a year, and the addition of several new products, including a germicidal detergent and a new synthetic wax. Other plans for the company include the completion of additional laboratory facilities and expansion of customer service.

★

Weston Ultra Vice-Pres.

William Weston has been elected vice-president of operations for Ultra Chemical Works, Inc., Paterson, N. J., division of Witco Chemical Co., Inc., New York, it was announced in November by Henry Ruegg, Ultra president.

With the division for 22 years, Mr. Weston is responsible for manufacturing operations at all four of Ultra's plants. He was plant superintendent before his election.

Ultra's main headquarters for detergent and chemical manufacturing are in Paterson. Other plants are in Joliet, Ill., Chicago, and Hawthorne, Calif.

William Weston

Sales Contest

(From Page 125)

achievements. Perhaps the most interesting was the genuine jockey's whip which we sent to the stable jockey whose horse came in last in each of the individual furlong sprints. He was told to keep this symbol for the week or until some other stable took over the last position. This really seemed to work wonders—in fact some of our men even thought they saw bloodstains on the whip.

In order that our 37 branches would at all times be aware of the standing of each horse in the race, we prepared a six color, silk screen model of the race track which was attached to folding tables and sent one of these to each one of our branches, together with nineteen miniature horses, each with their individual post position numbers, jockeys and colorful racing silks.

At the end of each week the branch offices received a printed chart showing the actual position of all the stables' horses so all they had to do was to move the thoroughbreads into their proper positions and then see at a glance how each stable was progressing.

We also went to the extent of having beautiful painted bulletin boards erected outside our main offices featuring half a dozen race horses thundering down the stretch with, of course, the caption. . .

"WOOD'S GRAND NATIONAL SALES DERBY" and a big bull's eye board in the upper corner reading. . . .

"WOOD'S SANITATION FOR THE NATION—ALWAYS A WINNER"

This sales campaign was successful beyond our anticipation in spite of the talk of recession, the fact that our campaigns established new sales records every year. Since these sales contests take place in May and June we are invariably asked what happens to our sales in the months of July and August since most of our salesmen take their vacations during these two months. Almost unbelievably our sales in July and August are phenomenally high and as a matter of fact this year our sales in July and August were higher than during any other comparable months in the history of our company.

This we feel quite sure was occasioned by the fact that many of the sales that our salesmen anticipated writing up in May and June were for some reason or other delayed until later, plus the fact that they got into the habit of greater momentum, meaning more calls and consequently more sales.

There was, of course, a wealth of detail involved in the preparation and continuity of this campaign and I would like to say that unless anyone is prepared to spend a tremendous amount of time on such a campaign that they had better abandon the idea before they start.

Our salesmen and, in fact, all our personnel look forward to these sales campaigns. The salesmen's earnings increase, there are a lot of prizes for everyone to try to win and we always manage to have a lot of fun both during and after the campaign. Needless to say, we are planning to continue these May, June sales campaigns for many years to come.★★

German Advanced

Carlton A. German has been advanced to industrial sales manager of Solventol Chemical Products, Inc., Detroit, it was announced recently by the company.

Carlton A. German

With Solventol since 1944, Mr. German is now responsible for the sales and service of the firm's chemical and equipment products in the United States and Canada.

—★—

Visit Europe Affiliates

Julien Bellot, director of research of the perfume division of Florasynth Laboratories, Inc., New York, returned recently from a three months trip through Europe during which time he conferred with the heads of the firm's affiliates on the continent and visited with business associates and friends.

Along with Joseph H. Fein, the company's treasurer, Mr. Bellot examined new developments at Schmoller & Bompard, Grasse, France. This firm produces "Flower Absolutes" and is represented in the United States and Canada by Florasynth.

—★—

Fatty Acid Production Up

Production of fatty acids totalled 36.3 million pounds in September, it was announced recently by E. Scott Pattison, manager, Fatty Acid Producers' Council, New York. Of this amount, 5.2 million pounds were tall oil fatty acids in the "less than two per cent resin category." The remainder, split from animal and vegetable fats, amounted to 31.1 million pounds, compared with 30.6 million pounds in the preceding month. Total disposition of fatty acid production was 39 million pounds.

A breakdown of production in millions of pounds in each category of saturated acids includes: stearic acid, 5.1; other stearic acids, 9.3; high palmitic, 0.7; hydrogenated fish and marine mammal, 0.4; lauric-type acids, 1.7; other saturated fatty acids, 2.3.

For unsaturated fatty acids totals are: oleic acid, 5.8; animal fatty acids, 1.7; vegetable or marine fatty acids and unsaturated fatty acids, 3.6; and acids from tall oil, 5.2.

—★—

Toni Managers Meet

The annual meeting of district managers of Toni Co., Chicago, was held in October at the Buena Vista Hotel, Biloxi, Miss. Thirty-six field managers and executive sales personnel attended the gathering to discuss and analyze the company's sales promotion projects during 1958 and to determine sales goals for 1959.

Walter G. Willie, vice-president in charge of sales, stressed the importance of retailers' restocking hair care and cosmetic merchandise before the Christmas holidays in anticipation of the known sales increase of these products at that time and to avoid a January out-of-stock situation.

Carnauba Wax Crop Good

The carnauba wax yield from Brazil this year is expected to be as large as the unofficially estimated 1957 crop of 14,500 short tons, according to the Foreign Agricultural Service, U.S.D.A. The crop, currently being harvested, is also said to be of somewhat better quality than last year.

Traders and producers do not agree on the long-run future of carnauba. Some believe that production will eventually be reduced because of the low rate of replanting by producers, slow and inadequate natural reproduction, and inroads being made by insects. Growers and agricultural advisers point out that although small producers do little replanting, trees bear well for at least 50 to 75 years, and natural reseeding tends to maintain tree numbers.

—★—

Davies-Young Names Two

Reg Gildner has been appointed sales manager and Earl Melton named sales representative for Davis-Young Soap Co., Dayton, O., it was announced in November by the firm.

Mr. Gildner, who had been sales representative in the southern states for the past six years, makes his headquarters at the home office in Dayton.

In his new position, Mr. Melton covers eastern Tennessee and North Carolina. He has had experience in the chemical, cleaner, and wax industries.

Reg Gildner

Earl Melton

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3. Leather Oils	Emulsifying Agent for Leather Processing Oils	Wetting and Dispersing Agent for Leathers
4. Drilling Mud	Emulsifying Agent for Oil	Surface Tension Depressant
DISPERSION AND WETTING OF SOLIDS		
5. Rubber Manufacture	Thermo Plasticizing Agent	Increases Dispersibility of Filler
6. Fuel Oil	Keeps Sludge in Suspension	Prevents Segregation of Moisture
7. Printing Ink Manufacture	Aids Dispersion of Pigment	Reduces Viscosity of Ink
8. Ore Flotation	Flotation Reagent	Selective Wetting Agent
9. Additives for Lube Oil	Acts as Detergent	Inhibits Bearing Corrosion
WETTING AND DISPERSION OF LIQUID-SOLID SYSTEMS		
10. Crude Oil Emulsion Splitting	Reverting Agent for Water-in-Oil Emulsions	Aids in Wetting out Salts and Solids
11. Emulsifiable Solvent Cleaners	Dispersing Agent for Oil and Grease Deposits	Acts as Emulsifying Agent
12. Dry Cleaning Compounds	Linking Agent for Water and Solvent	Loosens Dirt Absorbed by Fabric
13. Fat Splitting Process	Dispersing Agent for Solid Fats	Acts as Wetting Agent
INHIBITION OF RUST AND CORROSION		
14. Corrosion Preventive Compounds	Rust and Corrosion Inhibiting Agent	Acts as Moisture Barrier
15. Anti-Freeze Solutions	Rust and Corrosion Inhibiting Agent	Aids in Dispersion of Scale
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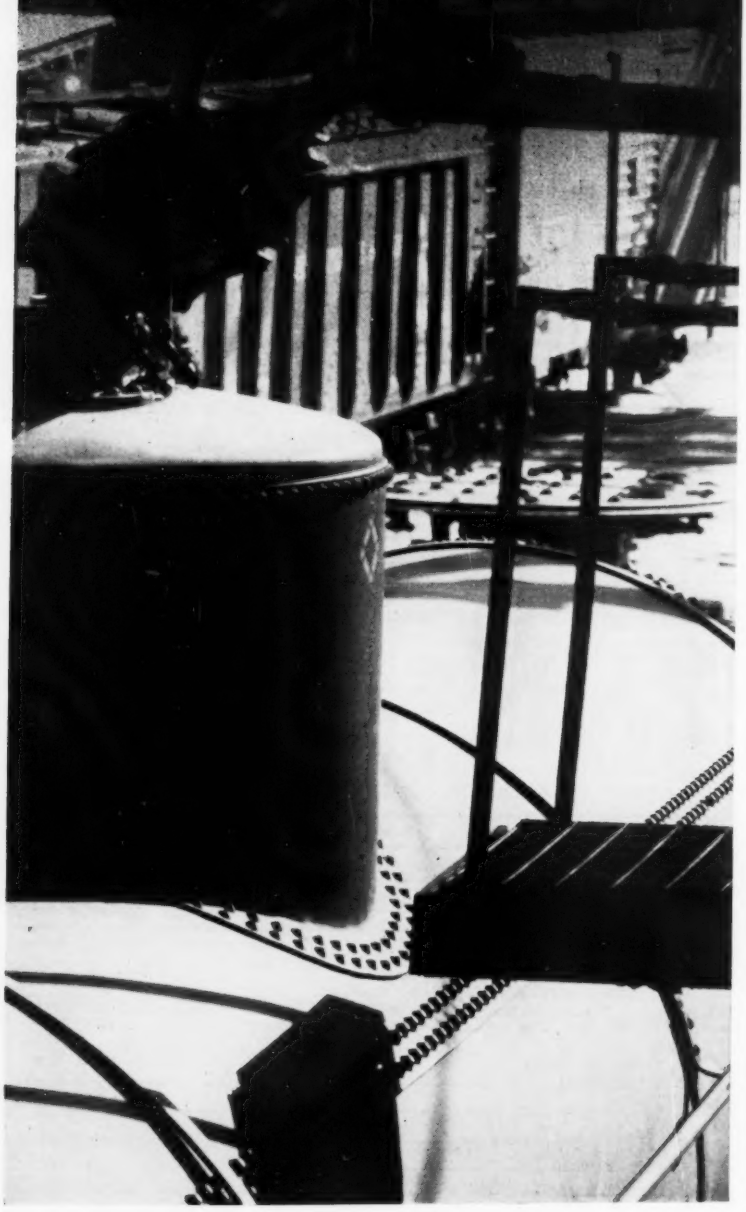

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Detergent Adsorption

(*From Page 62*)

the glass surface, and that evaporation took place from these edges (51). Though Langmuir does not necessarily consider adsorption of water on glass a true adsorption, but rather a solution phenomenon, other more recent data (52) show by infrared spectral analysis that dehydration of porous glass exhibited active centers for water adsorption.

Films are said to have a certain permeability which varies with the film packing and the nature of the molecule (7). Barium stearate-stearic acid films built up in the classic manner show that these films contain holes aggregating about four per cent of the total surface (95) and that defects accumulate so that the second layer has eight per cent holes and so on. After 25 layer deposits, the thickness was only 24 layers, showing that one layer was lost in filling up the holes in the other 24.

Heterogeneous films of fatty acid or calcium stearate when formed in the expanded state exhibited islands of liquid expanded phase surrounded by areas of gaseous phase. Condensed films of stearic acid were quite coherent. (87)

Adsorption of surfactant such as sodium dodecyl sulfate on a gelatin surface occurs as a primary adsorption at the basic sites of the protein molecule with the hydrophilic ends attached, the hydrocarbon chains left free and as a single layer. Above the inflection point in solubility where peptization occurs, a further or secondary layer of dodecyl sulfate ion is absorbed by van der Waals forces with the hydrophilic ends outward (77). When adsorption occurs on leather or collagen, cohesion is reduced as the surfactant ions cause physical separation of parts of the collagen molecules which otherwise would be close enough for interchain bonding to occur. A cationic (dodecyltrimethyl ammonium bromide) was much less effective in this respect than sodium dodecyl sulfate, and an octylphenol polyoxyethylene product had no effect (78).

Adsorption on surfaces is influenced by "elementary spaces" each capable of holding one molecule or atom and exhibiting specificity in adsorbability. Crowding of molecules to occupy adjacent spaces can affect the fraction covered and coverage is dependent upon the shape and plastic properties of the molecule. Electron mobility and coordination of electrons in the adsorbate and adsorbent may help to explain specificity of site adsorption on metals. Monomolecular films on surfaces may then cover less substrate area than calculation from measurments of compressed films would indicate. Films have a degree of permeability and this, in combination with patch coverage, can have a marked bearing on the ease and completeness of soil removal.

(To be Continued)

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Jay C. Harris

—★—

Babbitt Ups Ad Budget

B. T. Babbitt, Inc., New York, has disclosed that its advertising-promotion budget for 1959 is "well over" $4,000,000, compared with about $2,000,000 annually that has been appropriated in previous years.

SAVE
A DOLLAR
PER DRUM
ON YOUR
PERFUMING WITH
PILOT HD-90
FLAKE
Akyl Aryl Sulfonate...90% Minimum Active
Each drum of Pilot HD-90 represents one dollar you can save in odor masking and perfuming. That's because HD-90 is an odorless, colorless drum-dried flake; and consequently may be perfumed and dyed at minimum expense—usually a dollar per drum less!
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And you'll like working with HD-90: it's dust-free, dry flowing and remains that way even after long periods of storage; and HD-90 is kind to your plant during the troublesome hot summer months because it is stable in any weather.
Make Pilot HD-90 your cornerstone for all dry compounding. Write for literature and samples now.
LEADS THE WAY TO BETTER PRODUCTS
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PILOT California Co.
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Hogan to Chemo Puro

The appointment of John F. Hogan as manager of its market development department was announced recently by Chemo Puro Manufacturing Corp., Newark, N. J. Formerly with Pennsylvania Industrial Chemical Corp., and Refined Products Co., Mr. Hogan was on a research fellowship at the Mellon Institute for a number of years.

John F. Hogan

In his new post he has been engaged in promoting new uses for the firm's fungicides and preservatives which are sold under the "Chemocide" tradename.

★

New Warwick Polish Base

A new basic paste polish formulation is available from Warwick Wax Co., New York, it was announced last month by Maurycy Bloch, vice-president. "BP #10" can be used as a base for automobile, furniture, floor, or leather polishes.

Good penetrating and saturating power is claimed for the product, which make for a film of high and durable gloss with little buffing. Hard consistency, good solvent retention, and ease of spreading make the formulation versatile and easy to use, according to the manufacturer.

★

Breck Elected Director

Edward J. Breck, president of John H. Breck, Inc., Springfield, Mass., was elected recently to the board of directors of Springfield Fire and Marine Insurance Co. in that city. The insurance firm, founded in 1849, employs over 1,500 people, and is said to be one of the largest property insurance companies in the United States.

★

P&G Scholarship Awards

Forty-seven colleges and universities throughout the country will award 60 scholarships for the 1959-60 school year from Procter & Gamble Co., Cincinnati, it was announced recently by Howard J. Morgens, president. The scholarships are part of an educational aid program from P&G which totals nearly $1,000,000 annually.

The scholarship plan, entering its fifth year next September, provides 240 four-year scholarships, one-quarter of which are awarded each school year. Unrestricted funds totaling $144,000 are also made available to participating schools.

These funds are in addition to P&G's unrestricted grant program which provides $200,000 a year to universities and $110,000 to state and regional associations of colleges and universities. Additional funds under the company's fellowship program bring to more than $490,000 a year the total of unrestricted grants.

★

Babbitt Shows Profit

B. T. Babbitt, Inc., New York, showed a net profit of $760,252 for the first nine months of 1958, compared with a net loss of $547,265 for the same period last year. A net profit per common share of 69 cents before the preferred stock requirement and 63 cents per share after the requirement were also reported. These figures compared with a net loss of 52 cents and 54 cents, respectively, in 1957.

Marshall S. Lachner, president, credited progressive merchandising and a sound internal economy for the company's dramatic gains. The figures included the firm's consolidated subsidiaries except for the Brazilian subsidiary.

Nuvite Changes Name

Nuvite Products Co., Brooklyn, N. Y., has changed its corporate name to Nuvite Chemical Specialties Corp., it was announced last month by Frank Lester, president.

Recently, the company announced the expansion of its facilities to include an increased manufacturing area, larger research laboratories, and modern executive and administrative offices.

The new plant facilities contain an area of 6,000 square feet of floor space and feature the latest equipment for the manufacture of a full line of chemical specialties including deodorants, disinfectants, floor waxes, cleaners, paint strippers, and related items. In addition, the plant is equipped to do private label filling.

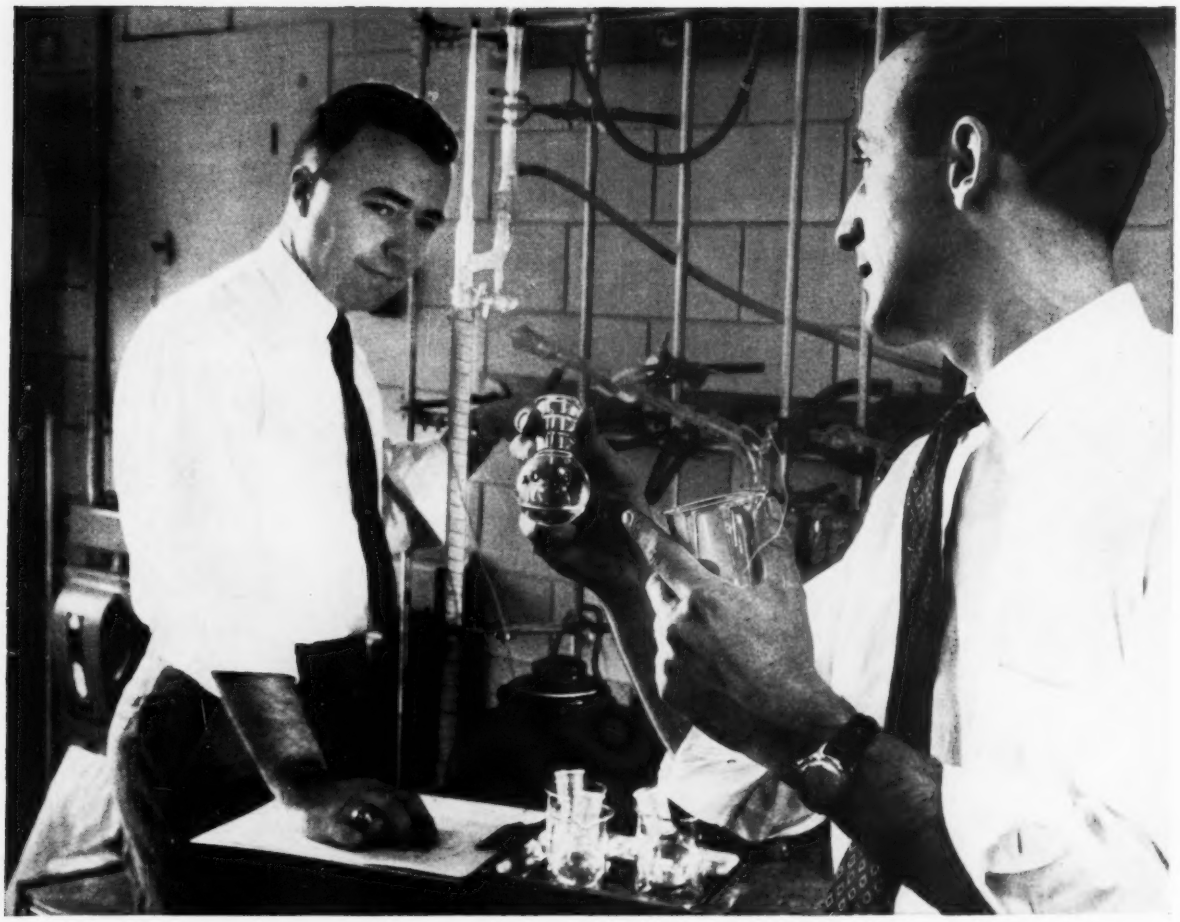
★

Jergens Names Bausewine

George Bausewine has been apponted general sales manager of The Andrew Jergens Co., Cincinnati, succeeding Frank Meeker, who recently became executive vice-president. Formerly field sales manager, Mr. Bausewine is succeeded in that position by Joseph J. Engelhart, west coast regional sales manager.

Mr. Bausewine has been with Jergens for 12 years serving as salesman, divisional sales manager, and national field manager. Mr. Engelhart joined Jergens 22 years ago.

George Bausewine



"Look at this sample of the stripped coconut . . . caprylic under zero point five!"

Depend on it – the caprylic acid content of GROCO 26 Stripped Coconut Fatty Acid never exceeds 0.5%. The capric acid content is reduced to less than 6%. The caproic is removed completely. Composition –

Caprylic acid	0.5%	Palmitic acid	6.0%
Capric acid	5.5%	Stearic acid	2.0%
Lauric acid	50.0%	Oleic acid	11.0%
Myristic acid	23.0%	Linoleic acid	2.0%

Also important – the amount of each component in GROCO 26 Stripped Coconut Fatty Acid never varies by more than ±5% of the specified amount. Lauric content is higher than you find in competitively priced acids. Color is lightest. Odor blandest. Heat stability and shelf life are outstanding.

Two facts explain these advantages. We use only coconut oil as raw material. We split and distill continuously by a standard procedure – always the same, shipment after shipment.

"Always specify A. Gross" . . . GROCO 26 . . . There's no better way to begin an end product.

Have you a detergent, cosmetic, resin or other problem that GROCO 26 might solve? Send for test samples. . . . Would you like more information? Ask for our brochure, "Fatty Acids in Modern Industry."

FATTY ACIDS

STEARIC ACIDS • COCONUT FATTY ACIDS • TALLOW FATTY ACIDS • VEGETABLE FATTY ACIDS
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3-ways-better cleansing
Prevents "clustering" by cleanser particles
Improves wetting of cleanser particles
Permits boost in water content
4-ways-better shelf life
Prevents "bleeding" of liquid components
Broadens the paste's temperature stability
Establishes "just-right" spread consistency
Safeguards properties of ammoniated pastes

7 ways

"Dutch Boy" Ben-a-gel
(gelling agent)

improves toothpastes

Just by adding "Dutch Boy" BEN-A-GEL gellant!

In recommended quantities (about ¼ as much as natural clays) this beneficiated ingredient provides 3-ways-better cleansing, 4-ways-better shelf life (see left). Since benefits *are directly* proportional to amount added, and since "Dutch Boy" BEN-A-GEL gellant has no adverse effect on system characteristics, you'll find improvements to market-tested compounds are wholly controllable, all gain.

Prove it yourself

Whittaker, Clark and Daniels, Inc. are distributors in the cosmetics field for this product of National Lead research. They'll gladly send you a sample, along with details of composition, properties and incorporation. Just send the coupon.

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Gentlemen: Please send free sample of "Dutch Boy" BEN-A-GEL gellant along with detailed information on its incorporation.

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Purex Acquires Puhl

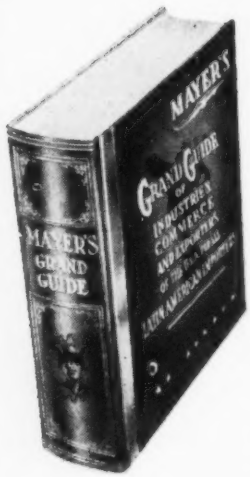
John Puhl Products Co., Chicago, a wholly owned subsidiary of Sterling Drug, Inc., New York, and a manufacturer of household cleaning products, was acquired recently by Purex Corp., Ltd., South Gate, Calif., according to a joint announcement by Alan C. Stoneman, Purex president, and J. Mark Hiebert, Sterling president.

The need for national distribution of both firm's similar products was the reason given for the acquisition which involved a cash transaction. Puhl continues with headquarters in Chicago as a division of Purex and Stanley H. Kord, who has been elected a Purex vice-president, continues as president of the new division.

A result of the purchase is the addition of "Little Bo-Peep" household ammonia to the Purex line. Puhl plants in four states supplement Purex facilities.

"Mayer's Grand Guide"

AMERICA'S BEST COMMERCIAL AND INDUSTRIAL REFERENCE DIRECTORY



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This highly recommended Guide is printed on first class paper, and is written in two languages: English and Spanish.

We still have a few copies available of the 1958 (No. 8) edition.
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We have a few locations open for REPRESENTATIVES

Honor Lever Promotions

Three divisions of Lever Brothers Co., New York, were honored recently for their food store promotions. The Lever division, which markets the firm's soaps and detergents, Pepsodent division, which handles dentifrices and toiletries and the food division took honors in the "Top Promotion of the Year" awards. The competition is conducted annually by Topics Publishing Co., New York, publishers of *Food Topics* and *Food Field Reporter*.

The awards for 1957-58 were based on a nationwide poll of more than 5,000 food dealers who operate or serve over 120,000 retail stores. A record total of 16,500 promotions were considered in the balloting.

"Dove" synthetic detergent bar figured in three of the awards, which were in the form of bronze plaques. The product was honored for its consumer advertising, trade advertising and the "Dove Perch" premium.

★

Drackett Agency Adds Two

Drackett Co., Cincinnati, recently appointed Young & Rubicam, Inc., New York advertising agency, to handle "Delete" rust and stain remover and "Vanish" toilet bowl cleaner. Both products are produced by Judson Dunaway Corp., Cincinnati, which was recently acquired by Drackett. The agency also handles Drackett's "Drano," "Windex," and "Twinkle."

★

Solvay Coast Sales Rep.

The appointment of John W. Priesing as west coast sales representative for Solvay Process Division of Allied Chemical Corp., New York, was announced last month by Lester B. Gordon, Solvay vice-president.

With Allied since 1956, Mr. Priesing is responsible for developing sales of the division's products in the Pacific coast states. He makes his headquarters at Allied's consolidated sales office in San Francisco.

FTC Cites Comstock

An automobile polishing mitt called "Roll-A-Shine" distributed by Comstock Chemical Co., New York, was said by the Federal Trade Commission to have little more efficiency than an ordinary soft cloth and does not "end car waxing, washing, polishing, forever!" as advertised. Named in the complaint are Comstock Chemical, David L. Ratke, president, Herman Liebenson, secretary, and Monroe Caine, a large stockholder. These three men own all of the firm's stock and control its business practices, the complaint says.

The respondents are charged with making false claims in newspaper and magazine advertisements concerning the mitt's quality, composition, characteristics, performance, endorsement, and guarantee. A hearing is scheduled in Washington, D. C., on Dec. 15 before an FTC hearing examiner.

★

Copesan Opens Offices

General offices of Copesan Services, Inc., pest control and sanitation services operator, were opened recently in the Board of Trade building, 141 W. Jackson Blvd., Chicago. The offices are under the direction of Nelson C. Brewer, Jr., general manager.

The firm offers special services such as sanitation programs and laboratory analysis as well as periodic preventive pest control services through 28 regional offices throughout the country. Officers of the company include: H. K. Steckel, president; J. E. Sameth, vice-president; B. W. Eldredge, treasurer; and I. B. Carncross, secretary.

★

Monsanto Research Lab

Monsanto Chemical Co., St. Louis, has geared itself for future expansion of its research effort on agricultural chemicals with the beginning of operations at its agricultural research laboratory in that city.

The new facility is a two-story structure with 25,000 square feet of floor space and includes laboratories, offices, conference rooms, a research library, and eight adjoining greenhouses.

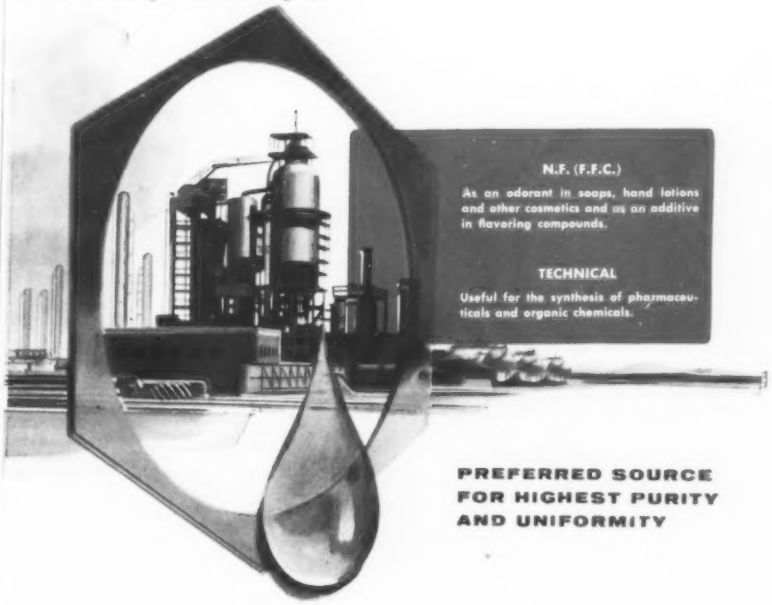
Features of the laboratory include four "climate control chambers" said to be the first such installations for industrial research on pesticides, and a room-size "insectary" for rearing insects that provide a source of "subjects" for experimentation.

d-Con Advtg. Manager

The appointment of Walter C. Camas as advertising and sales promotion manager of d-Con Co., New York, was announced recently by Frank A. Corbet, president.

For the past seven years Mr. Camas was brand manager for Economics Laboratory, Inc., St. Paul, Minn., in charge of advertising, publicity, and sales promotion for its consumer products.

From Heyden Newport


N.F. (F.F.C.)
As an odorant in soaps, hand lotions and other cosmetics and as an additive in flavoring compounds.
TECHNICAL
Useful for the synthesis of pharmaceuticals and organic chemicals.

PREFERRED SOURCE FOR HIGHEST PURITY AND UNIFORMITY

BENZALDEHYDE

When you process with Heyden Newport Benzaldehyde, you are assured of unsurpassed purity and uniformity in the characteristics you seek – chemical reactivity, volatility, odor and taste.

That's why leading cosmetic, aromatic and pharmaceutical producers rely on Heyden Newport as their basic source for this valuable intermediate.

For new product development, as well as for those now in commercial use, it will pay you to investigate the processing benefits of Benzaldehyde and its chlorinated derivatives, such as o-Chlorobenzaldehyde and p-Chlorobenzaldehyde.

Heyden Newport Benzaldehyde N.F. (F.F.C.) or Technical is shipped in 450 lb. stainless steel drums, 100 lb. glass carboys, and 40 lb. lined drums. Samples and technical data are available upon request.

Heyden Newport Chemical Corporation, 342 Madison Ave., New York 17, New York.

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Excerpts From The Chemical Hall of FAME

Jacobus Henaricus van't HOFF

1852-1911

Present views of stereochemistry stem from Jacobus Henaricus van't Hoff's "La Chemie dans l'Espace." For his discovery of the cause of optical activity in carbon compounds, van't Hoff received in 1901 the first Nobel prize for chemical achievement.

By 1901 Foremost's El Dorado Division, with 9 years of experience as a supplier of coconut oil and its by-products, had already established a solid reputation for purity and uniformity of product.

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METHYL ESTERS — Caprylate, Eldo 18*, Caprate, Laurate, Coconate, Myristate, Caproate, Palmitate

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KANSAS CITY Vulcan Sales Co. · MINNEAPOLIS M. H. Baker Co. · NEW ORLEANS Breffeilh & Sheahan Co. · NEW YORK H. Reisman Co.
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Detergents Trends

(*From Page 52*)

its most effective form—the true diphase cleaner, we might give our attention to further investigation in the household line of products centered around the study of solvents in single phase detergent systems. But this is a subject on which we will have more to say at a later date.

Trade Names

Sub-script	Trade Name	Company
1.	Intexol AA3	Intex Chem. Co.
2.	Intexon NP3, NP4, or OP3	Intex Chem. Co.
3.	Intexide HL-6	Intex Chem. Co.
4.	Intexol X-3	Intex Chem. Co.
5.	Sterox AJ85	Monsanto Chem. Co.
6.	Blancophor DS-86	General Dyestuff Corp.
7.	Polyox WSR-35	Carbide & Carbon Chem. Co.
8.	Surfonic N-95	Jefferson Chem. Co.
9.	Krystallex S-26	Krystall Chem. Co.
10.	Ninol AA-62 Extra	Stepan Chem. Co.
11.	Miranol SM Conc.	Miranol Chem. Co.
12.	Miranol SMA Modif.	Miranol Chem. Co.
13.	Atlas G 7596J	Atlas Powder Co.
14.	Alrowax	Alrose Chem. Co.
15.	Amine S.	Alrose Chem. Co.
16.	Amine O.	Alrose Chem. Co.

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Lever 25-Year Dinner

Forty-eight new members were admitted to the Quarter Century Club of Lever Brothers Co., New York, at a banquet last month at Boston's Sheraton-Plaza Hotel. More than 320 employees, all of whom have been with the company for 25 years or more, attended the dinner. Each employee was presented with a specially prepared booklet of the company's history with each club member's name inscribed on the cover.

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HARCHEM INVITES YOU TO COMPARE

If you use Fatty Acids you will want Harchem's new publication of specifications and characteristics for their Century Brand Fatty Acids. Harchem gives you the latest data about all grades in their complete line of uniform quality fatty acids. You are the best judge of the type and grade you need. By using this information as a basis for comparison, you can select the fatty acid best suited for your specific use.

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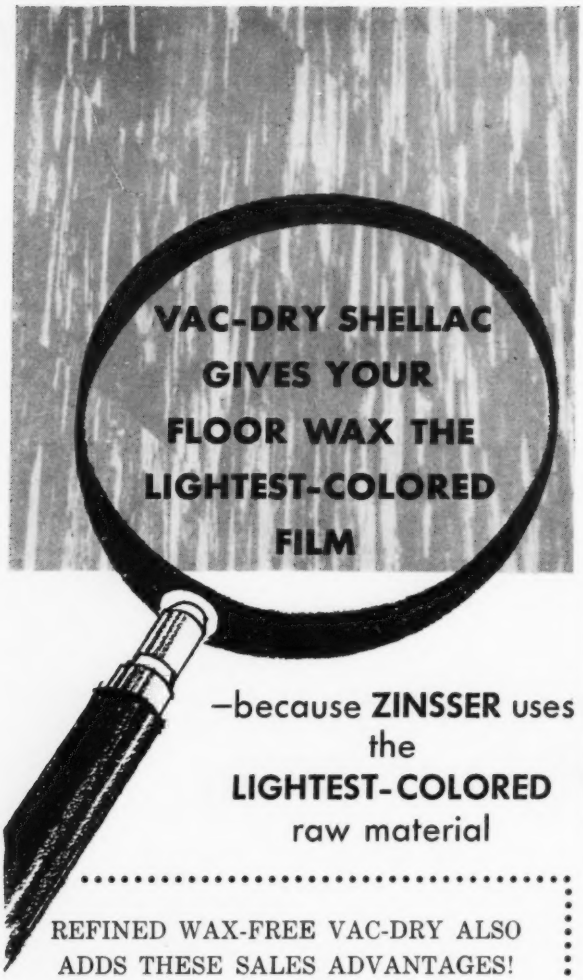

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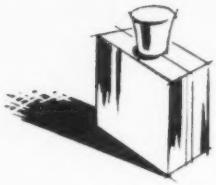

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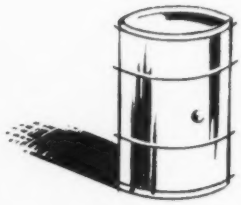

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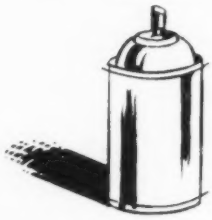

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SAACI Elects Nominators

Warren F. Schumacher of J. T. Baker Chemical Co., New York, has been elected chairman of the 1959 nominating committee of the Salesmen's Association of the American Chemical Industry, Inc., New York, it was announced recently by Robert J. Roberts of Emery Industries, Inc., president.

Others elected to the committee are: E. L. Collins, Chilean Nitrate Sales Corp.; James W. Brady, New York Quinine and Chemical Works, Inc.; George L. Conboy, Merck & Co.; William J. Weed, Millmaster Chemical Corp.; Edward A. Bush, Dragoco Co.; and John A. Chew, John A. Chew Inc., all of New York.

Installation of the association's officers for the coming year is slated for a luncheon meeting on Jan. 20 at the Hotel Commodore, New York.

Association members also elected James G. Park, who recently retired from Enjay Co., New York, to SAACI life membership.

★

Rose Newport Vice-Pres.

Harold E. Rose has been appointed vice-president in charge of production for Newport Industries Co., producer of tall oil fatty acids and rosins and division of Heyden Newport Chemical Corp., New York, it was announced recently by E. E. Sisson, division president.

Mr. Rose, who joined Newport in 1940, succeeds H. L. Marter, who retired early last month but continues with Newport in a consulting capacity.

During Mr. Rose's association with Newport he has been superintendent of its Oakdale, Fla., plant and has supervised operations at the company's other facilities as assistant vice-president of the division.

★

Hooker Div. Office Moves

The executive sales office of the phosphorus division of Hooker Chemical Corp., Niagara Falls, N. Y., has been moved fom 114 East 40th St., New York, to 60 East 42nd St., New York 17, it was announced last month by John B. Sutliffe, general sales manager of the division. The former location was the executive headquarters of the Shea Chemical Corp. which consolidated with Hooker last May to form the phosphorus division.

Hooker's New York offices are located at the 42nd Street address.

Mr. Sutliffe also announced the appointment of W. Newell Wyatt as midwest sales manager of industrial chemicals for the division.

Previously assistant director of sales for industrial chemicals for Shea, Mr. Wyatt makes his headquarters at Jeffersonville, Ind. He has been associated with Warner Chemical Co., Westvaco Chemical Corp., and Theobald Industries.

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PLEXENE POWDER — one gram chelates 199 to 212 mg of $CaCO_3$ at pH 11.

PLEXENE SPECIAL — with no ferric iron present, one gram chelates 120 mg of $CaCO_3$ at pH 11.

One gram of **PLEXENE SPECIAL** *chelates the following amounts of ferric iron*

at pH 10 . . . . . 54 mg
at pH 9 . . . . . 68 mg
at pH 8 . . . . . 74 mg

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Chemicals for Difficult Processing

Aerosol Valves
(*From Page* 157)

as a fine mist. This is accomplished by a small passage or series of small passages leading into a swirl chamber which allows the concentrate liquid to move in a circular pattern at a high velocity. The swirling concentrate then exits through the external orifice into the atmosphere as a fine mist.

Actuators of this type opened a new field of thinking in formulating aerosol products. Compatibility of propellant and concentrate was no longer necessary to obtain a desired spray pattern. Although these actuators make possible a reduction in the amount of propellant formerly necessary for correct product breakup they may never achieve the breakup required for products such as space insecticides, where a very small particle size is necessary for true effectiveness.

Powdered Aerosols

Another item which demanded the valve manufacturers' prompt attention was the dry powdered aerosol. Many problems confronted the valve manufacturer in attempting to supply a valve for such a product. The most common failures of valves when used to spray dry powders were clogging and leakage. Clogging occurs when powder particles build up in certain valve restrictions, eventually causing blockage of valve passages. Leakage occurs when powder particles build up on valve seats, causing improper shut off. The complete solution of these problems has never been found. Presently there are dry powdered aerosols being marketed but with a minimum limitation of 10 per cent powder. It has been found that a package containing less than 10 per cent powder minimizes the problems of clogging and leakage sufficiently to allow marketing of these products. The solution to the above problems is currently being sought by the engineering departments of the valve manufacturers so that larger

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percentages of powder can be packaged thereby making possible such products as powdered plant sprays and bath talc sprays.

Many believe the answer may be the development of an improved dry powder aerosol formulation. This school of thought contends that if the right suspending agent could be found so that the dry powder could be suspended as a colloid in the propellant, then many of the present valve designs could be used successfully. This may illustrate the close working cooperation necessary between the valve manufacturer and the formulator for the successful solution of mutual problems.

What new designs are forthcoming in valves? The trend can best be demonstrated by the recent development of valves for compressed gas propelled products such as dental creams, cosmetic creams, chocolate syrup and vitamin concentrates. These products required multiple orifice stem valves, functional actuators, product resistant linings for valve mounting cups and dip tubing materials which could withstand sterilizing temperatures necessary in food packaging Who would have thought 10 years ago that today we would be pressure dispensing products having viscosities such as toothpastes? Yet this is a reality because of the tremendous technical advance of the entire aerosol field.

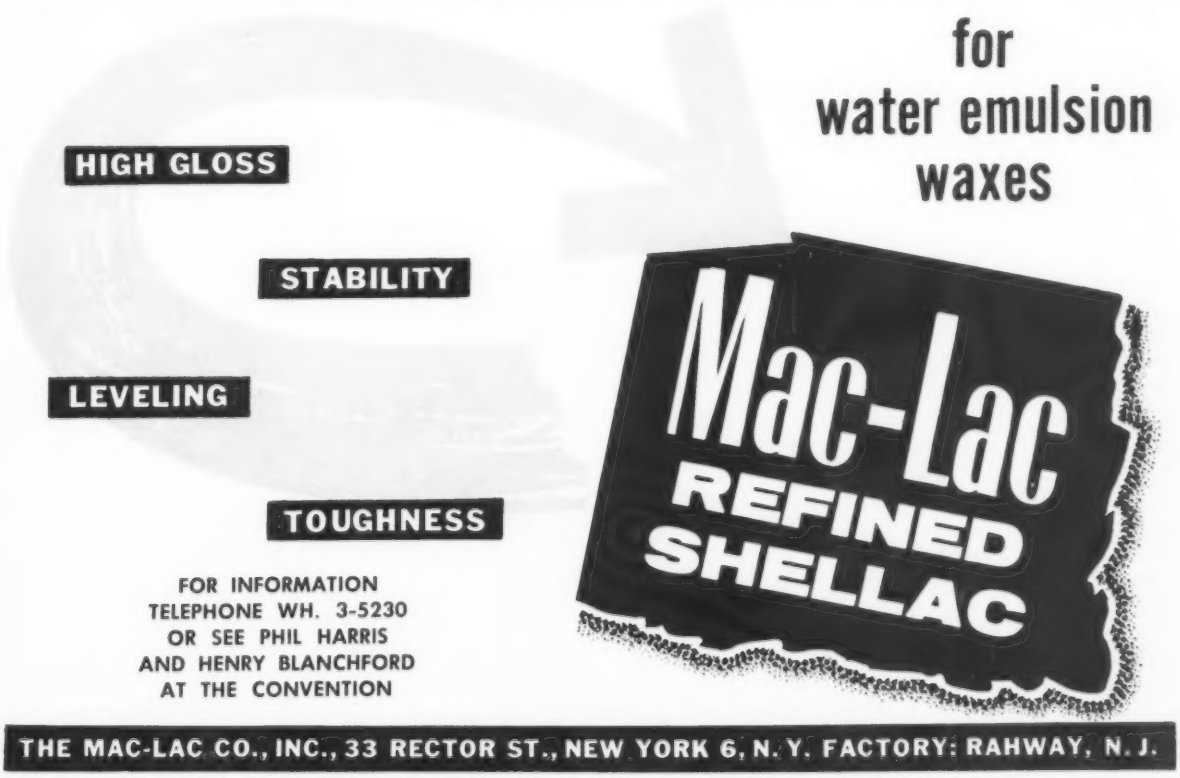
Metered valves for compressed gas dispensed vitamin concentrates have very recently been introduced. This particular metering principle is also adaptable to such products as cough medicines, liquid coffee concentrates and detergents. Sizes of the metered dose can be varied from 0.5 c.c. to 7.0 c.c., depending on the formulation and size of the container. Metered valves for the spraying of compressed gas propelled products will become available in the very near future.

Many pressurized food products such as salad dressings, toppings and beverage concentrates will appear on the market soon because of proper valve designs and the right construction materials.

Another new development is the availability of drop dispensing valves for such products as liquid aspirin, nose and eye medications, sweeteners and many other products requiring this type application.

Valve design changes will continue as long as new products, new containers, new packaging principles, and more exacting performances make these changes necessary.

The suitability of aerosol valves for products can best be determined by cooperation between the user and the valve manufacturer. The user knows what he wishes in valve performance. By discussing his needs with the valve manufacturer he can have these requirements fulfilled. Many of the developments discussed have been the result of close working arrangements between user and valve manufacturer. The problems will be many in the future, but the solutions will also be many, as can be predicted by past performances.★★



Breck Names Brunette

Harold J. Brunette has been appointed to the newly created position of production planning and packaging manager for John H. Breck, Inc., Springfield, Mass., it was announced recently by Edward J. Breck, president.

Harold J. Brunette

In his new post, Mr. Brunette is responsible for planning and scheduling of production, inventory control, and packaging operations at the firm's West Springfield plant. He has been with Breck since 1950 when he became a member of the production control department.

★

Carter Sales Increase

Sales, net income, and earnings per share of Carter Products, Inc., New York, increased in the third quarter this year. Sales amounted to $12,062,254 against $10,582,896 last year. Net income was reported at $1,554,792 or 61 cents a share compared with $1,040,813 or 40 cents a share in 1957.

★

Borax Co. Names Stern

J. D. Stern has been named by Pacific Coast Borax Co. Division of United States Borax & Chemical Corp., Los Angeles, as assistant to the division's vice-president and general manager, J. F. Corkill. The division's executive headquarters is located in New York. Prior to his recent appointment Mr. Stern was assistant to the general manager.

New Turco Headquarters

Turco Products, Inc., Los Angeles, has broken ground for construction of its new national headquarters at Wilmington, Cal., 20 miles south of Los Angeles, it was announced last month by S. G. Thornbury, president. The one million dollar facilities are scheduled for completion next summer. They will offer 66,000 square feet of floor space.

A new administration building, executive, research center, and engineering service building are included in the project. The new facilities will be connected with the firm's manufacturing plant which was built on this site three years ago.

★

van Loon Retires

E. van Loon, deputy manager of the glycerine section of N. V. Chemische Fabriek "Naarden," Naarden, Holland, retired last month. With the firm since 1925, Mr. van Loon was given a reception in his honor.

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Fleuroma Names Eisenkraft

Albert E. Eisenkraft last month was appointed sales manager of Fleuroma, Inc., New York.

Albert E. Eisenkraft

With the firm since 1951 as a sales representative, Mr. Eisenkraft has had extensive experience in the essential oils and fragrance industries.

★

Swift Expands Line

The regular line of soap and surfactant products of Swift & Co., Chicago, has been expanded to include a growing number of metallic, fatty base complexes tradenamed "Flexal," according to a recent company announcement.

The products are said to be commercially pure formulated finished compounds based on insoluble metallic stearates. They are produced in a new simplified manufacturing process reportedly designed to eliminate many of the contaminants usually associated with similar materials. Included in the "Flexal" line are sodium stearate, calcium stearate, magnesium stearate, calcium oleate, lithium stearate, and a modified water soluble lithium stearate.

Complete information is available from the company, soap department, 1115 Packers Ave., Chicago 9.

★

Show Program Announced

A total of 61 sessions are planned for the 10th Plant Maintenance & Engineering Conference that will be held concurrently with the 10th Plant Maintenance & Engineering Show Jan. 26-29 at the Public Auditorium, Cleveland, it was announced last month by Clapp & Poliak, Inc., New York, producers for both events. The show will run for four days and the conference for three days, Jan. 26-28.

Opening session of the conference will be devoted to study of the maintenance system of a national manufacturing company. Subsequent sessions in the form of round-table discussions will deal with the maintenance problems of particular industries and 20 of the sessions will consider general problems affecting all plants. Sessions will be conducted concurrently at morning and evening meetings.

Nearly 400 companies, many that make and market soaps, detergents, and other chemical specialties and the appliances for utilizing them in cleaning and maintenance operations, will exhibit at the 1959 show.

Renderers Hold Convention

A three-day convention of the National Renderers' Association was held in Washington, D. C., early in November. The 25th annual gathering heard Max Myers, administrator of the Foreign Agricultural Service of the Department of Agriculture, and R. B. Mortimer, association president and head of Peterson Manufacturing Co., Los Angeles, discuss the future of world markets for the industry. Both men stressed the need of joint industry, trade association, and government activity to promote foreign markets for tallow.

★

Harold Portwood Dies

Harold J. Portwood, 69, died Oct. 8 in St. Thomas Hospital, Akron, O., after a sudden seizure.

Mr. Portwood founded and operated the TNT Exterminating Co. of Akron from which he retired last tyear.

He is survived by his wife, a daughter, two sons, and five grandchildren.

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Open Advisory Offices

Harry Bennett and Edward Rosendahl, former president and executive vice-president respectively, of Glyco Products Co., New York, have opened offices in the Coliseum Towers, 10 Columbus Circle, New York 19, under the name of Bennett-Rosendahl Co., Inc. The two men, with Glyco for the past 30 years, are acting as business advisors to small and medium size chemical companies. Both have sold their interests in Glyco.

Glyco's assets were acquired by Chas. L. Huisking & Co., New York, last summer and the firm became Glyco Chemicals Corp., a sales and manufacturing subsidiary of Huisking. The parent firm is a chemical merchant, broker, and importer of basic materials for the pharmaceutical and other specialties industries.

Bennett-Rosendahl includes advice on organization, publicity, personnel, safety, financing, and preparation of companies for sale or merger in its service.

Letters

(*From Page* 45)

that in many parts of the country disinfectants are used first of all as deodorants, second as cleaners, and "also-run" as actual disinfectants. To refer to "market appeal" only once, and that at the very end of the discussion, overlooks the fact that all-to-often the janitor who mops the basement of the court house wants to make sure that the judge on the second floor will smell it, even through the thick smoke of his cigar. And there just isn't anything that will get through to the judge like pine oil. . . .

William H. Sachs
Consultant,
Chemical Specialties
Atlanta, Ga.

Vick Buys Antiseptic Co.

Vick Chemical Co., New York, recently completed the acquisition of Milton Antiseptic, Ltd., London, England. The transaction involved $1 million cash for the firm and acquisition of 97 per cent of Milton's outstanding stock. Milton manufactures a packaged disinfectant and sterilizer used primarily for baby bottles.

—★—

Bow to Cleanser Industry

Household cleansers and laundry aids were saluted in the opening commercial of Armstrong Cork Co., Lancaster, Pa., earlier this month on its "Circle Theatre" telecast.

The message called attention to the many all-purpose liquid cleansers and laundry aids now on the market and how they have eased the household chores of today's housewives. An estimated 20 million people watched the hour long show.

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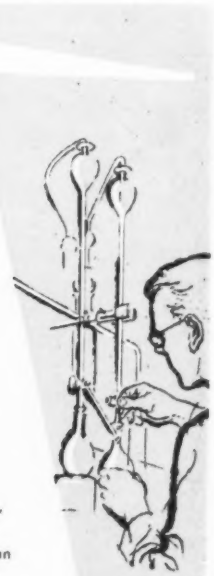

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Gloss-Meter Measurements on Test Panels of Acrylic and Conventional Lacquers

Color of Paint	Original Gloss on Panel	Gloss after 19 months weathering with waxing	Gloss after 19 months weathering no waxing
Sun Beige (acrylic)	84	92	52
Sun Beige (conventional)	89	92	40
Sandalwood Tan (acrylic)	82	91	69
Sandalwood Tan (conventional)	89	79	17
Antique White (acrylic)	83	91	59
Antique White (conventional)	90	91	39
Rose Mist (acrylic)	86	89	61

Gloss-Meter Measurements on Test Panels of New and Old Enamels

Glacier Blue (new)	92	98	85
Glacier Blue (old)	81	91	61
Willow Green (new)	90	98	67
Sunburst yellow (new)	90	98	60

Auto Polishes

(*From Page* 92)

These results substantiate the claims made by the wax manufacturers who state that although the new finishes have improved gloss retention, they will eventually chalk or dull and to restore the original appearance, cleaners and waxes will be needed. Cleaners and waxes will also be required before chalking takes place to remove bugs, embedded dirt, and other matter not removed by ordinary washings. This test proves that there are definite advantages in wax protection for the new finishes and it should dispel any notion that waxes are on the way out.

— — ★ — —

PR Firm Moves

W. Alec Jordan Associates, public relations firm, has moved to 290 Park Ave., New York 17. The company previously was located at 52 Park Ave.

Cos. Chemists Meet

(*From Page* 143)

Y. Oldshue, Mixing Equipment Co.; and "Some Theoretical Aspects of Dental Caries Control with Dentifrices and Mouthwashes," by L. S. Fosdick, Chemistry Department, Northwestern University Dental School, Chicago.

The technical meeting was followed by a reception and dinner dance. The new officers were officially installed at the dinner. Featured speaker was Dr. Albert M. Kligman of the University of Pennsylvania, Philadelphia.

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Oronite Names Oldenburg

C. J. Oldenburg has been appointed manager of the Chicago sales district of Oronite Chemical Co., San Francisco, it was announced last month by the company.

Formerly a sales representative in the district, Mr. Oldenburg joined the firm in 1944. Oronite is a subsidiary of Standard Oil Co. of California.

Prior to his Chicago assignment, he was with the company's manufacturing department in New Orleans and was also associated with California Research Corp.

★

Floor Finish List

A new approved list of floor finishing products will be released about Jan. 1, 1959 by the Maple Flooring Manufacturers Association, Chicago. The current listing expires at the end of this year.

Examinations of the products are currently underway at the laboratory of Foster D. Snell, Inc., New York. Floor finish manufacturers not familiar with the 30-year old program of the association in conducting these examinations have been invited by W. C. Abendroth, MFMA research committee chairman, to write to the association for information.

Mr. Abendroth added that the association's approval of products extends for three years with the condition that manufacturers notify MFMA of any formula change.

★

Appoints Representative

Whittaker, Clark & Daniels, Inc., New York, has been appointed export sales representative by American Cholesterol Products, Inc., Edison, N. J. The new representative supplies basic materials for the cosmetic, toilet goods, and pharmaceutical industries through world-wide sales and technical agents. American Cholesterol manufactures sterol and lanolin derivatives used in cosmetic and pharmaceutical preparations.

Poultry Chemicals Need OK

All labels and chemical compounds used in processing poultry must be approved by the U. S. Department of Agriculture as part of a poultry processor's qualification for inspection services under the Poultry Products Inspection Act which becomes effective Jan. 1. All poultry and poultry products which move across state lines for sale must bear a stamp of approval after that date indicating they have been inspected for wholesomeness by a USDA agent.

★

Elect Haas Vice-Chairman

F. Otto Haas was elected vice-chairman of Rohm & Haas Co., Philadelphia, at a recent board of directors meeting, it has been announced by Otto Haas, president. Dr. F. Otto Haas succeeds Duncan Merriwether whose resignation becomes effective at the end of this year, but who continues as a director and a member of the board's executive committee.

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Lever Appoints Flaherty

Patrick J. Flaherty has been appointed brand publicity manager in the public relations division of Lever Brothers Co., New York, it was announced in November by J. E. Drew, public relations director.

Patrick J. Flaherty

Formerly promotion director for the New York office of Grant Advertising, Inc., Mr. Flaherty had served in that company's Hollywood, Chicago, and Dallas offices as news bureau director and public relations director.

★

Michigan Appoints Werth

Bogardus Werth has been appointed to the chemical sales staff of Michigan Chemical Corp., Saint Louis, Mich., it was announced recently by the company.

Previously Mr. Werth was associated with Virginia-Carolina Chemical Corp., Richmond, as assistant sales manager for agricultural chemicals and prior to that was with the Virginia state agricultural extension service. In his new post he covers the southeastern United States.

★

Firm Rosin Prices

Hercules Powder Co., Wilmington, Del., announced for the first time firm rosin prices for a calendar quarter. Effective Oct. 1, prices are per 100 pounds net in car load quantities f.o.b. producing plant: grades K and M, $7.80; N, $7.90; WG, $8.25; and WW, $8.60.

Wyandotte Appoints Smith

Carl S. Smith last month was appointed executive assistant to Bert Cremers, who is vice-president of Wyandotte Chemicals Corp., Wyandotte, Mich., and general manager of the firm's Michigan Alkali Division.

Previously Mr. Smith, who joined the company earlier this year as a staff assistant, was administrator of the controller's division. His previous associations include: American Agricultural Co., E. I. du Pont de Nemours and Co., and Huron Milling Co.

★

Lentheric Trade Mailer

Lentheric division of Helene Curtis Industries, Inc., New York, reproduced its four-color Christmas advertisement which appears in national magazines, as part of a trade mailer sent to cosmetic buyers throughout the country. The mailer outlines the division's Christmas advertising plans in magazines, newspapers, and television.

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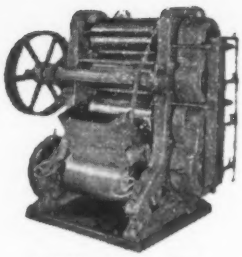

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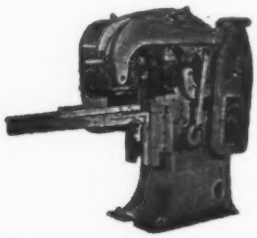

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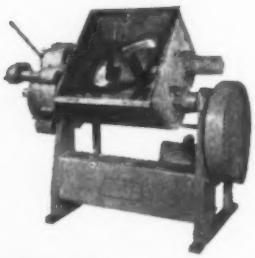

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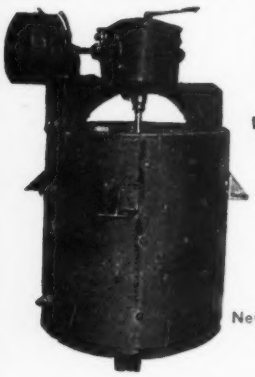

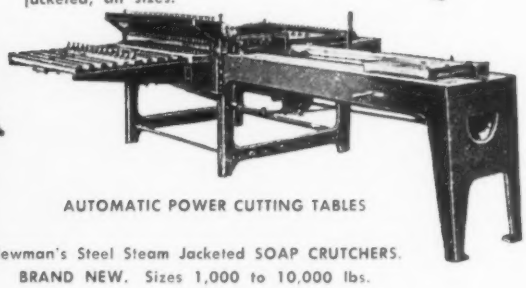

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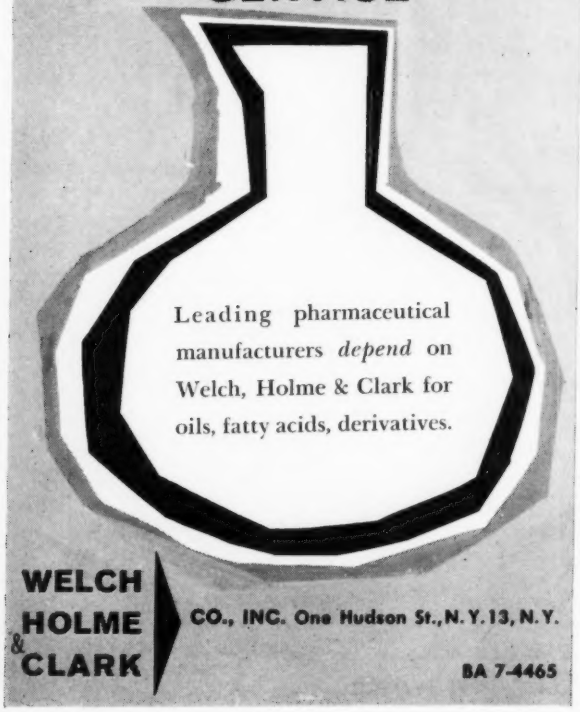

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New Chemicals Firm

Chemical Manufacturing Co., Lansing, Mich., a 12-year old soap manufacturing firm owned by C. A. Leas, was purchased recently by three Saginaw (Mich.) businessmen. The new owners are Walter C. Parker, president, Ralph Garlick, vice-president, and Ralph W. Parker, secretary and treasurer.

The company produces a line of dairy chemicals including a milk stone remover, a bottle washing compound, a laundry detergent for automatic washers, and a dish washing detergent. Chemical Manufacturing is now located at 230 Warren St., Saginaw, on the second floor of Parker Dairy Co.

New Hollingshead Rep.

Raymond Fry was appointed recently manufacturer's representative of the industrial maintenance chemical division for R. M. Hollingshead Corp., Camden, N. J. With the firm since 1956, Mr. Fry covers the Ohio, western Pennsylvania, and West Virginia territory. He makes his headquarters in Cleveland, O. Previously Mr. Fry covered the same territory as a sales representative.

—★—

Suit Filed Against Four

E. I. du Pont de Nemours and Co., Wilmington, Del., R. M. Hollingshead Corp., Camden, N. J., and two other firms were sued for $33 million recently by Frederic A. Barton, owner of Bar's Leak Supply, Inc., Holly, Mich. The suit charges conspiracy to "maliciously disparage" the automotive leak-proofing and anti-rust products manufactured by Barton's firm.

Distribution of a pamphlet throughout the automotive industry, the suit says, tried to show that soluble oil used in Barton's products was harmful to an automobile's cooling system.

Military Disinfectant

(*From Page* 111)

several quaternaries which, when formulated with properly selected sequestering agents and detergents salts, are not appreciably affected even by extremely hard water.

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However, even these are appreciably affected by some inorganic detergent salts. Moreover, quaternaries must not be used with soaps or synthetic anionic detergents.

Table IV is a summary of the tests on several selected phenolic derivatives. As a result of practical consideration of such factors as bactericidal activity, stability (i.e. shelf life as well as solution life), availability, costs, etc., o-benzyl-o-chlorophenol, chloro-o-phenylphenol and 2-chloro-4-phenylphenol were selected for study from a number of phenolic compounds which are described in the literature (9), (10), (11), (12), (13), (14), (15), (16).

(To be Concluded)

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Coming Meetings

American Oil Chemists Society, 50th anniversary spring meeting, Roosevelt Hotel, New Orleans, April 20-22, 1959.

Association of American Soap & Glycerine Producers, 32nd annual convention, Waldorf-Astoria Hotel, New York, Jan. 20, 21 and 22, 1959.

Chemical Specialties Manufacturers Association, 45th annual meeting, Commodore Hotel, New York, Dec. 8-10; 45th midyear meeting, Drake Hotel, Chicago, May 18-20, 1959.

National Flexible Packaging Association, annual meeting, Waldorf-Astoria Hotel, New York, Jan. 20-22.

National Packaging Show of American Management Association, International Amphitheater, Chicago, April 13-16; packaging conference, Palmer House, Chicago, April 13-15.

National Sanitary Supply Association, 36th annual convention and trade show, Conrad Hilton Hotel, Chicago, April 12-15; 37th annual convention, Fontainebleu Hotel, Miami, Fla., May 22-25, 1960.

Plant Maintenance and Engineering Show, Public Auditorium, Cleveland, Jan. 26-29, 1959.

SAACI, annual meeting, Commodore Hotel, New York, Jan. 20.

Synthetic Organic Chemical Manufacturers Association, monthly luncheons, Roosevelt Hotel, New York, Nov. 12; and Jan. 13, Feb. 10, March 11, 1959.

Toilet Goods Association, scientific section, Waldorf-Astoria Hotel, New York, Dec. 8; 24th annual convention, Waldorf-Astoria, New York, May 12-14.

Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco, Aug. 11, 12 & 13.

Index to ADVERTISERS

Adrian-Daniels, Inc. 259
Aerosol Research Co. 196
Aerosol Techniques, Inc. 186
American Can Co. 184
American Cyanamid Co. 21
Anchor-Hocking Glass Co. 150, 151
Andersen, Dr. Carl N. 253
Antara Chemicals Div., General Aniline & Film Corp. 22, 93
Argueso & Co., M. 243
Arizona Chemical Co. 218
Arkansas Louisiana Chemical Corp. 16
Aromatic Products, Inc. 81
Atlantic Refining Co. 228

Bareco Wax Co., Division of Petrolite Corp. 112, 113
Barr & Co., G. 188
Blockson Chemical Co. 13
Bombrini Parodi-Delfino 193
Books 30, 80, 94, 260
Bowman Feed Products, Inc. 108
Bradshaw-Praeger & Co. 126
Brockway Glass Co. 164

Candy & Co. 4
Central Can Co. 156
Chase Products Co. 197
Chemical Insecticide Corp. 246
Chemical Specialties Mfrs. Assn. 74
Chilean Iodine Educational Bureau 240
Clayton Corp. 179, 181
Colgate-Palmolive Co. 70
Columbia-Southern Chemical Corp. 252
Commercial Solvents Corp. 143
Consolidated Packg. Machy. Corp. 207
Continental Can Co. 154
Continental Filling Corp. 152
Continental Oil Co. 17
Cowles Chemical Co. 39, 76
Cox, Dr. Alvin J. 253
Crown Cork & Seal Co., Inc. 178

Diehl & Co., Wm. 252
Dodge & Olcott, Inc. .....2nd Cover, 130
Dominion Products, Inc. 259
Dow Corning Corp. 122
Dragoco, Inc. 23
Dreyer, Inc., P. R. 102
du Pont de Nemours & Co., E. I. 95, 180
Dura Commodities Corp. 119

Eastern Can Co. 163
Eastman Chemical Products, Inc. 116
Emery Industries, Inc. 37
Emulsol Chemical Corp. 25
Ertel Engineering Corp. 208

Fairfield Chemical Division.....4th Cover
Felton Chemical Co. 19
Florasynth Laboratories, Inc. 96
Foremost Food & Chemical Co. 240
Fries & Fries, Inc. 242
Fritzsche Brothers, Inc. 222
Fuld Brothers, Inc. 148

Geigy Agricultural Chemicals 104
Geigy Industrial Chemicals 44
General Chemical Div., Allied Chemical Corp. 170, 171
Gesell, Inc., R. 248
Gillespie-Rogers-Pyatt Co. 106
Givaudan-Delawanna, Inc. 48, 226
Glidden Co., The 206
Gross & Co., A. 236

Harchem Div., Wallace & Tiernan 241
Hercules Powder Co. 10, 40, 98, 136
Heyden Newport Chemical Corp. 239
Hill Top Research Institute, Inc. 253
Hoffman-La Roche, Inc. 34C, 34D
Hooker Chemical Corp. 28, 69
Hudson Laboratories, Inc. 253

Inerto Co., The 251

Jefferson Chemical Co. 212
Johns-Manville 220

Kiefer Machine Co., The Karl 200
Knox Glass, Inc. 162
Krystall Chemical Co. 66
Kurly Kate Corp. 252

Leberco Laboratories 253
Leeben Color & Chemical Co., Inc. 252
Lehmann Co., J. M. 204
Lueders & Co., George 216

Mac-Lac Co., The 245
Magnus, Mabee & Reynard, Inc. 120
Mahoney, John J. 253
Mantrose Corp., The 75
Manufacturers Aid Co. 259
Marchon Products, Ltd. 68
Maryland Glass Co. 158
Mayer, Joseph, Publisher 238
Mazzoni, S.p.A., G. 202
McCutcheon, Inc., John W. 253
McLaughlin Gormley King Co. 84
Mercantile Wax Division 250
Miranol Chemical Co., The 35
Molnar Laboratories, Inc. 253
Monsanto Chemical Co. 232

National Aniline Division 27
National Lead Co. 237
Neumann, Buslee & Wolfe, Inc. 210
Newman-Green, Inc. 168, 195
Newman Tallow & Soap Mchy. Co. 254
Nopco Chemical Co. 64, 65
Norda 38

Olin Mathieson Chemical Corp., Organic Chemicals 3
Onyx Oil & Chemical Co. 118
Owens-Illinois Glass Co. 146, 147

Packer Machinery Corp. 206
Paul & Stein Bros., F. H. 247
Penick & Co., S. B. 124
Perry Brothers, Inc. 63
Peterson Filling & Packaging Corp. 177
Philadelphia Quartz Co. 26
Pilot California Co. 33, 234
Plastics & Coal Chemical Div. 100
Plax Corp. 149
Polak's Frutal Works, Inc. 20
Polyvinyl Chemicals, Inc. 83
Precision Valve Corp. 172,173
Prentiss Drug & Chemical Co. 110
Price, Dr. Donald 253
Procter & Gamble Co. 46

Rapids Machinery Corp. 210
Rawleigh Co., W. T. 259
Reilly Tar & Chemical Corp. 214
Risdon Mfg. Co. 176
Robeco Chemicals, Inc. 250
Robinson Wagner Co. 67
Rohm & Haas Co. 34
Rommel, Allwine & Rommel 253, 258

Scientific Associates 251
Scranton Aerosol Packaging 192
Semet-Solvay Petrochemical Div., Allied Chemical Corp. 77
Shanco Plastics & Chemicals, Inc. 114
Shell Chemical Corp. 20
Shulton, Inc. 12
Sindar Corp. 142
Foster D. Snell, Inc. 248, 253
Solvay Process Div., Allied Chemical Corp. 31, 135
Solventol Chemical Products, Inc. 259
Solvents & Chemicals Group, The 198
Sonneborn Sons, Inc., L. 231
Stalfort & Sons, Inc., John C. 182
Stepan Chemical Co. 6, 7
Sterwin Chemicals Inc. 128
Stillwell & Gladding, Inc. 253
Sun-Lac, Inc. 259
Synfleur Scientific Labs, Inc. 138

Tamms Industries, Inc. 249
Tanatex Chemical Corp. 244
Tennessee Corp. 14
Thomasson of Pa., Inc. 259
Titan Chemical Industries 259
Tombarel Products Corp. 208
Tube Manifold, Inc. 190

UBS Chemical Corp. 78
Ultra Chemical Works 11
Ungerer & Co. .....3rd Cover
Union Bag-Camp Paper Corp. 141
Union Carbide Chemicals Co., Div. of Union Carbide Corp. 82, 132 194
Union Standard Equipment Co. 257
U. S. Borax & Chemical Corp. 32
U. S. Bottlers Machinery Co. 210

van Amerigen-Haebler, Inc. 42, 7, 73
Van Dyk & Co., Inc. 244
VCA, Inc. 191
Velsicol Chemical Corp. 79
Verley & Co., Albert 15
Verona Chemical Co. 18
Victor Chemical Works, Inc. 34A, 34B
Vorant Products 259
Vulcan Steel Container Co. 144

Walton-March Co. 249
Warwick Wax Co. 134
Welch, Holme & Clark Co. 256
Wells Laboratories, Inc. 255
West End Chemical Co. 36
Western Filling Corp. 259
Westvaco Chlor-Alkali Div. 24
Westvaco Mineral Prods. Div. 8, 9
Wheaton Plastics Co. 160
Wisconsin Alumni Research Found 246
Woburn Chemical Corp. 258
Wyandotte Chemicals Corp. 140

Zinsser & Co., William 242

Tale Ends

COME next March 29 and Nils S. Dahl, general manager of John T. Stanley Co., New York soap outfit, will mark his 55th year with Stanley. This probably makes him the man who has been in the soap business longest. The runner-up? A young man name of R. R. Deupree, chairman of P&G, who has been with his firm since 1905. Both, incidentally, are the two remaining founders of the soap association still active in business. Mr. Dahl, who was elected to his 25th term as treasurer of AASGP in January of this year, is the only founder still active in the association.

* * * * *

Americans attending the first annual meeting of the Canadian Manufacturers of Chemical Specialties in Montreal last month received a truly royal welcome. Led by George Flemming, president of the Association, the Canadians were gracious hosts. Officially representing the American CSMA were James Ferris, its president, and Al Mulliken, assistant secretary. H. W. Hamilton, CSMA secretary, was unable to attend owing to serious illness of Mrs. Hamilton. Of the 200 who attended the meeting, 38 were Americans.

* * * * *

Bob Horsey, v.p. of Givaudan-Delawanna, Inc., New York and other places, when in Europe a couple of months ago decided to take a quick look at the Worlds Fair at Brussels. He hopped into a cab and buzzed out to the fair grounds. Alighting from his cab, the first person he spotted was George Uhe, prez of George Uhe, Inc., also of N. Y. and known these many years in the essential oil and aromatic chemical field and an old pal of Senor Horsey. Small world, ain't it?

* * * * *

Arnold Mallis, entomologist with Gulf Research & Development Co. and author of "The Hand Book of Pest Control" recently appeared on television as a subject in John Daly's program, "What's my line?" The panel finally guessed his occupation as one who raises roaches, fleas, flies and other bugs for use in testing Gulf's line of insecticides. During the guessing contest, the word, "entomologist," was not mentioned once.

* * * * *

Two more executives in the soap and toilet goods field have been the subjects of recent newspaper advertisements for large corporations. Ed Breck, prez of John H. Breck, Inc., of Springfield, Mass. and shampoo fame was featured in a Western Union advertisement not so long ago. Then late last month, Denis Duveen, head of the Duveen Soap Corp. who makes private brand soaps over in Long Island City was featured in an advertisement by the Chase Manhattan Bank in New York.

Miller Brewing Co. of Milwaukee, brewers of Miller's "High Life," had a tough problem in its shipping department. Beer cases were too slippery on the outside and were always slipping off the hand trucks in and around the plant. After trying many things, they hit on coating their cases with "Ludox." Dupont's anti-slip ingredient used primarily to make floor waxes non-skid. The case of the slipping beer cases was solved. Presto, no more slip, no more breakage.

* * * * *

Embarrassing moments! Geoff Wood, prez of G. H. Wood & Co., Toronto, and widely known in the sanitary supply field both in Canada and the U.S., recently addressed the first annual meeting of the Canadian Manufacturers of Chemical Specialties in Montreal. While in the midst of a slightly off-color story to his exclusively male audience, in walked a lady, none other than Mrs. Wood. Geoff stammered a bit, changed the subject abruptly and went on with his speech. Everybody wondered what happened until they noticed one female sitting quietly in the back of the room.

* * * * *

Donald Martin who was associated with Antara (General Aniline) and E. F. Drew for some years and was well known in the detergent business, has now become a permanent resident of Florida. Don is the owner and operator of the Ridgewater Apartments in Fort Lauderdale, right on the ocean front. From the pictures, it's a very beautiful place. Anybody who has an interest in contacting him in the Sunshine State can do so at 609 Breakers Av., Fort Lauderdale, Fla.

* * * * *

It started out as a wall paper cleaner and ended up as a child's modeling material. That's what happened to Kutol Products of Cincinnati who make hand cleaners, wall cleaners, etc. Their wall cleaner is a dough-like substance ideal for modeling. So they switched into the toy market under the name of "Play-Doh." The product went over in a big way and really made the big-time in the toy market. And if that isn't modern industrial diversification, we miss our guess.

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*Reg. U. S. Pat. Off., FMC

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